412 Each mistress of a tent has a little
wooden scraper to clean the floor of the tent, which is generally
356 covered with a layer of fine sand taken from the bed of the nearby
342 wadi.

415 Let us add one or two earthen pots, little teapots and tea glasses,
and we have an idea of Tuareg furniture, which, as one may
realize, is reduced to the simplest terms.

484 When a camp is moved, all these objects are loaded on asses,
492 provided for the occasion with little pack saddles. The women are
[462] left with folding the baggage, loading it, and transporting it on the
asses. They themselves ride on the baggage during the moving;
[565] only noblewomen travel on camel back. Camels are used in
moving only if it is a long trip.

/230/ Chapter 3

Food

243 People may have said that the Tuareg, like many herding
262 peoples, lived on the milk from their herds. More precisely, they
● live on the products of their animals, but milk and meat alone
would not be enough. Indeed, the base of their diet is a graminacea,
béchena (*Sorghum cernuum Host.*), a kind of millet cultivated in
the Saharian oases and in the Sudan.

The Tuareg eat some wheat, but very rarely. Especially during
[252 their moves and in the caravans, they eat wheat cakes cooked in
484] the sand, for they are easily and quickly made.

It is rather curious to note that the Tuareg, who belong cultural-
[101] ly to the Mediterranean civilization (which may be called the
wheat civilization), have not kept wheat as the basic food as other
North African peoples have. And yet the question of food is one
of the things which most ties man to his native milieu and which

243 262 he generally carries with him in his migrations. Wheat raising goes down to the Sudan as far as Timbuktu, Aïr, and a little north of Nigeria; but everywhere it has been introduced recently, due to the influence of the Arabs, who have not abandoned their traditional food.

[412] Béchena is a food they adopted because of their exodus toward the Sudan; they are at the present time much closer to the Sudan than they are to North Africa from the point of view of material living conditions, that is, unless this plant formerly existed in a self-sown state in the Sahara, as Professor Chevalier has assumed, and was one of the principal food resources of its first inhabitants.

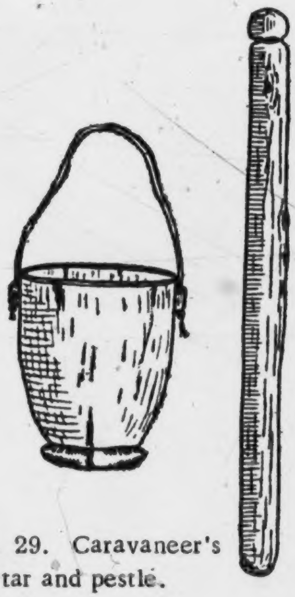


Fig. 29. Caravaneer's mortar and pestle.

177 241 By its agriculture and its production, the Sahara is completely Negro. Agricultural methods, except for irrigation, /231/ are borrowed from the Sudanese, especially work with the hoe (daba), while North Africa mainly uses the plow which is unknown in the intertropical zone.

252 262 Béchena is eaten as a cooked flour porridge, as raw flour, or mixed with liquids, water or milk.

[438 484 592] Dates also play a large part in the diet of the Tuareg. Every year each family head organizes a little caravan to the Touat or Tidikelt to bring back two or three loads of poor-quality dried dates which are crushed with a pestle and eaten with camel's milk.

According to what we know of the production of the cultivated
262 lands of the Ahaggar itself and according to what the Tuareg are obliged
433 to import, we may know approximately their needs. During the good
439 years, local production is equivalent to only one quarter of the needs.
It may be evaluated at 150
tons. To this must be added
wheat production, but this
cannot be taken in con-
237 sideration insofar as con-
415 sumption is concerned, since
234 it is almost entirely destined
for export. It follows from
this that import needs
amount to 4, 000 loads of
millet a year, calculated at
150 kilograms each, making
600 tons, which are for the
most part bought or ex-
changed at Damergou or in
the Tahoua region. The
annual demand for dates is
400 loads.

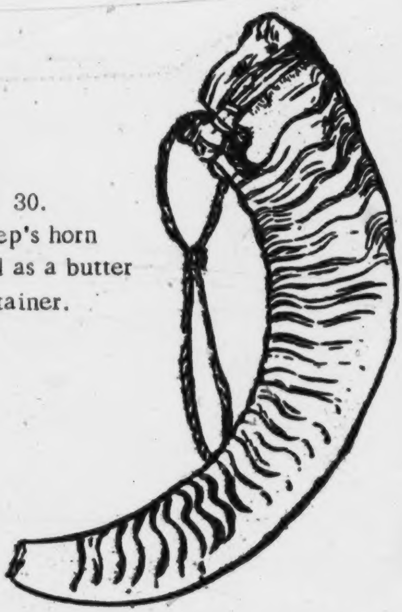


Fig. 30. Sheep's horn used as a butter container.

From these figures it
146 follows that the annual needs per person are approximately one load of
262 millet and one-tenth of a load of dates.
511

Individual consumption may thus be estimated at 187 kilograms of millet and 15 kilograms of dates per year, while an identical calculation /232/ for the Saharian Arabs has given us 180 kilograms of wheat and 75 kilograms of dates. But we must not deceive ourselves. These figures are drawn up for years, if not of abundance, at least of relative facility. Indeed, the annual average is very much lower, for the Ihǎggaren do not always have at their disposal the means of exchange to meet their needs, and one may reduce the figures cited above by a good third, sometimes even by half.

824
222

To make up this deficiency in graminaceae, the Tuareg have recourse to products of gathering.

After a rain the captives and the Imrad women gather the seeds of certain plants which grow in the Ahaggar valleys. They are the afasso (Panicum turgidum F.) and the oulloul (Aristida pungens D.). But the size of the yield varies with the abundance of rain, and one may say that most of the time it is quite /233/ uncertain. This is not the case in the Sudan, where the Iklan gather whole bags of wild seeds, particularly cram-cram (Cenchrus echinatus), every year. [462] [237 281 415 234]

To be sure, there are a few wild berries in the Ahaggar, such as those from the jujube tree (Zizyphus lotus D.) and the téborak (Balanites aegyptiaca). In case of famine the Tuareg fall back on other seeds, such as those of the colocynth, the Acacia tortillis, etc. However, all these plants play only a secondary role in the Tuareg diet. [731] [262]

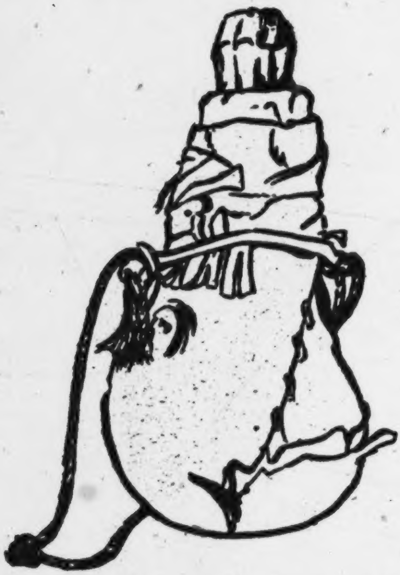


Fig. 31. Little leather flask used as a butter container.

The Tuareg have at their disposal milk from their camels, goats, and ewes. They drink it either whole or diluted with water, either fresh or sour. 272

The luxury of drinking whole milk is reserved for young mothers and children. Adults generally drink fresh milk morning and [264]

[264]

272 evening after the milking, and at the noon meal they drink milk which has already soured. It may accompany the dishes /234/ of
●[262] béchena, serve as a sauce, and also be taken as a drink. When they make long moves, the Tuareg carry a bag full of skim milk on their camels. This turns rapidly and gives a sour-tasting whey which is very refreshing. But milk is particularly appreciated for its by-products, butter and cheese.

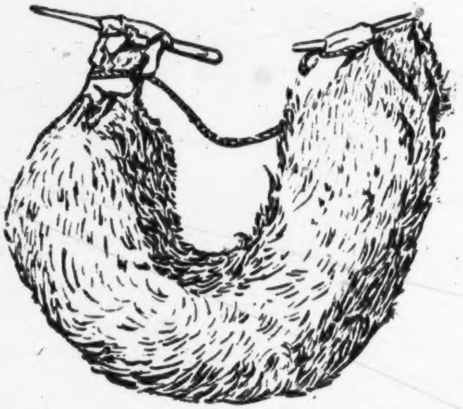


Fig. 32. Butter container made from the skin of a camel's neck.

234 Butter -- oudi -- is obtained by churning milk in a
[415
237] little leather bag; a woman shakes it on her knees, making it swing from right to left and from left to right. The butter col-
[237
415] lected is placed inside a sheep's horn which serves as a receptacle. When butter production exceeds daily consumption, the butter is placed in leather containers, in the shape of a flask, where the heat usually keeps it liquid or very fluid, except in winter when it is necessary to heat it to get it out of the container.

262 Butter is mainly eaten as a sauce; béchena gruel or wheat cakes are moistened with it. The Tuareg never cook it, as in fried foods.

234 In years when pasturage is particularly good, which assures an abundance of milk from the animals, the Tuareg make cheese -- tikomaren. They sour the milk, squeeze the curds in little mats

234 to extract all the water, and then dry them on /235/ small screens
placed in the branches of trees. It goes without saying that cheese
making is very rare in the Ahaggar and that the Tuareg make it
[438] particularly when they are nomadizing in the Sudan. Every year
the Ihǎggaren bring back large supplies of cheese from their stay
in the Sudanese zone; these cheeses, dry as a bone, are either made
by the Ihǎggaren or bought from the southern tribes. They make
252 an important contribution to the Tuareg diet. These dry cheeses
262 are ground in a mortar and reduced to small fragments so that they
have the consistency of flour. Then they are mixed with food,
either in _béchena_ gruel or in a drink of _béchena_ flour and dates.

262 It might be supposed that meat plays a very large role in the
Tuareg diet. But let us recall one of our old French proverbs
which says that the shoemaker is always the worst shod. We could
apply this adage to herders, who perhaps eat less meat than anyone
else. A herder has animals for the use of their products, but he
very seldom eats them for each butchering is a loss of capital.

Indeed, the Tuareg kill their animals only under very unusual
[233] circumstances, especially at the time of religious and family
festivals. These killings recall somewhat the religious meaning
of sacrifices. This does not mean that they do not like meat, for
when they raid a rival camp, they hasten to make drastic inroads
on the smaller livestock and eat until they are about to burst.

224 Hunting furnishes them a little additional meat. Each year
262 they kill a certain number of gazelles and wild sheep, eating part
[251] of the meat fresh and drying the rest to keep it on hand.

They capture star lizards (_Uromastix acanthinurus_), jerboas,
222 _gondi_ (_Ctenodactylus sp._), sometimes even jackals and hares. We
262 can add to their meat diet grasshoppers (_Shistocerca gregaria_),
[224] which they grill in the embers and then dry in order to pulverize
[252] them. All Saharian nomads are very fond of grasshoppers, and
since remotest antiquity some North African tribes are supposed to

222 have made them the base of their diet; for this reason they were
262 nicknamed acridophages. The Nasamonians of Herodotus prepared
them in the same way the Tuareg do, and the /236/ similar diets
of the two peoples is perhaps not pure coincidence.

There are a few fish ponds in the Ahaggar, but the Imochar
226 and the Imrad do not eat the flesh of these animals; only the
262 Issekkemâren catch barbels and sometimes catfish, or rather they
gather them up in the wadis after floods, for they do not know how
to fish, properly speaking.

The sedentary peoples raise chickens, but the Tuareg do not
262 eat them either, since they consider the meat impure. The same
interdict is extended to eggs. The only bird which is an exception
is the ostrich. There are no longer any ostriches in the Sahara, but
[223] when the Ihǎggaren go to the Sudan they capture them if they have
the chance; in addition, they eat ostrich eggs cooked in the ashes.

Times of scarcity were sometimes experienced. They are rare
262 now that caravans can circulate freely, but they were much more
731 frequent when the state of war continued for a long time. The
224 Tuareg fell back on wild plants which do not generally enter into
their diet: the young growths of *tahlé* (*Typha elephantina*), the
[824] leaves of the *tanekfit* (*Eruca aurea*) and the *aramas* (*Atriplex halimus*),
the underground stems of the *danoun* (*Cistanche lutea*) which resembles asparagus, and many other plants of very dubious food value,
which they ate to assuage their hunger. The state of famine can
[252] become so pronounced that they sometimes gather up old bones,
grind them up, reduce them to flour, and make gruels of them. It
[579] goes without saying that it is during these periods that pillaging is
at its height. People steal from camp to camp, from tribe to tribe,
and everyone forgets his brother and his friend, thinking of only one
thing -- survival by any means.

264 Before the French occupation the Tuareg as a general rule had only one meal a day, in the evening, after milking the animals. During the day they contented themselves with drinking a little milk.

251 262 The national dish of the Tuareg is asink, which is a porridge of millet cooked in water and moistened with butter or whey. This meal is especially popular in winter and during the entire cold season. During the very hot months, they prefer a beverage of water or whey in which they throw millet flour, diluted sometimes with dry cheese or powdered dates. This is alakoh. Dates are also eaten /237/ in summer, ground and mixed with water or milk.

252 When the Tuareg kill a sheep, they prepare the intestines which they enclose inside the stomach. After having tied the two extremities of the stomach, they put it on a bed of ashes to cook. This way of cooking, which is the one most commonly used by hunters, is called abatoul. Meats are prepared boiled or cooked under the ashes. Those that are boiled are particularly the ones which were previously dried (wild sheep, gazelle, sometimes sheep). In this case, they are first crushed between two stones, for they are as hard as wood; the meat is then spread in pieces on a dish of asink.

The Tuareg do not prepare roast meat over embers, but they place it under the ashes. When they want to cook a whole sheep, they open it in two and then put it under the ashes, taking care to turn it once during the roasting.

251 262 For great occasions -- religious festivals, marriages, or receptions for prominent guests -- the Tuareg butcher young camels. They serve them with a couscous of coarse-grained wheat.

The domestic animals slaughtered are goats, sheep, camels, and cattle when there are any. They do not eat horses, asses, or dogs.

[727] Cooking is done by the captives, close by the masters' tents.

264 Men take their meals by themselves and receive the food first. Women and children eat in their turn, and the Iklan receive the rest.

[114] 276 For his part, Commander Cauvet, in describing Tuareg clothing, said that men kept their pipes and tobacco in the pocket of their big blouses.

Thus all these testimonies coming from such trustworthy travelers tried to make us believe that the Tuareg are pipe smokers. For our part, we have never seen any.

On the other hand, they are very fond of chewing tobacco, and their wives also practice this custom, so that they finally have a deformation of the lower lip caused by the craze they have of stowing the quid between the gum and lower lip.

[439] Tobacco is not cultivated in the Ahaggar; it is imported from the Touat by the Arabs. The Sudanese Tuareg get it from the sedentary peoples of the Niger or through caravaneers from Upper Dahomey. They generally add a few natron crystals to it to take away the acridity, or else the ashes of graminaceae which play the same role as natron.

177 276 Many Nigerian Tuareg have formed the habit of chewing kola nuts; this is a powerful stimulant which the Negroes use a good deal. A few Ihǎggaren /239/ indulge in this practice when they go to the Sudan, but they have not introduced it into their everyday mores and never use kola when they are in their own country.

● 262 The Tuareg are subject to a rather large number of dietary interdicts. First, like Moslems, they may eat only meats from ritually butchered animals. They must abstain from eating the [273] meat of pigs and wart hogs and from drinking fermented drinks which are harīm. The meat of fowls--except the ostrich -- and fish is also forbidden and considered impure. But these are customs which go back before Islam. They also may not eat the [825] meat of the uran, because this lizard is considered to be the descendant of their maternal uncle.

241 turnips, onions, garlic, pimento, beans, pumpkins, native melons, watermelons, various gourds of local origin, and sometimes lentils. [422] These vegetables belong properly to the cultivator and not to the proprietor of the garden. [262] They are consumed by him, for the Tuareg generally disdain them and eat them only when they are staying in the agricultural centers.

But these centers may be handicapped by numerous climatic 132 factors.

241 Rains are obviously beneficial when they come at the right 312 time; unfortunately, they most often fall in winter or in summer, seasons which do not correspond to the largest growth of vegetation. The plants benefit from them only when the rains are very abundant and the ground can store up water for several months. But still, rainfall must not be too strong, or else it can cause the wadies to overflow and immediately destroy the feggaguir. It then requires several months to reconstruct them and in the meantime the crops which cannot be irrigated dry up on the spot and are completely lost.

132 Cold can also have a disastrous effect. Winter wheat does not 241 suffer from it but its development is slowed up. It is much worse for arboriculture, for if it is late and comes after the trees have blossomed, which sometimes occurs in January, it is likely to stop pollination completely. Fortunately, trees in arboricultural centers like Tăzerouk bloom much later and there are only sudden frosts to fear.

/247/ The wind which blows violently in the spring may also hinder arboriculture by knocking down flowers or young fruits, indeed even fruits which are almost ripe. The great hot summer winds endanger the harvest by the intense drying they cause, unless this difficulty is overcome by abundant watering. Now, it is precisely at this time that the flow of the feggaguir decreases as a result of the heating of the soil and the intense evaporation.

It may thus be seen that agriculture in the Ahaggar is subject to many risks and that the harvests may be very variable. The abundance or scarcity of water causes the seeded areas to vary in

		1911	1938
162 103	T-i-n-Ǎmenser	36	temporarily abandoned
	Tifert	50	" "
	Essélésékin	30	
	T-i-n-Târâbin	15	abandoned

166 These figures bring out the weakening of some centers to the 621 advantage of others. Thus, a number of cultivators from [648] Taràhouhaout (where the French post was formerly located) came to settle at Tamanrasset, and the group of little centers in the outskirts of Ǎbalessa, Iglen, Tǎfarit, etc., has absorbed the groups from other abandoned centers like Tifert, Essélésékin, Ilâman, Tarahananet, etc.

[241 312] Together these centers number about 400 gardens and 80 feggaguir.

● 262 439 433 The wheat harvested is partly consumed by the cultivators and chiefly intended for export; it is exchanged at the Touat for dates. The total harvests in the Ahaggar corresponds to only one-fifth of the needs of its inhabitants, even in good years.

621 433 There are fifteen agricultural centers exploited in the Ahaggar: Tamanrasset, Tǎrhaouahout, Tahifet, Tǎzerouk, Ideles, Ǎbalessa, Hirhafok, Iglen, I-n-Amegel, T-i-n-Ǎmenser, Amsel, Tigeneouin, Talan-Tedit, Mertoûtek, and Esselésékine.

[166] In addition there are twenty-two other centers which have been abandoned for some years as a result of dryness or lack of manpower: Aïtoklane, Ǎdenek, Ǎmrah, Ǎbezou, Ǎglil, Bloûmet, Déhine, Dar Mouli, Ennedid, Innezal, Ilâman, In Ǎmertek, Ilafok, Outoul, Ouhet, Souaïka, T-i-n-Târabin, Touakin, Teberbert, Tarahananet, Tahart, and Joraf.

232 these saddle camels, one may not, therefore, refer to a particular breed /race/ adapted for speed, as one may commonly hear spoken of.

436 The camel has a well determined exchange value among the Tuareg. It is one of the bases for comparison in their commercial transactions.

233 Each tribe marks his animals with a particular sign, and /251/
422 the owners who have many camels also have their own signs, marked with a hot iron on one of the parts of the animal's body -- neck, cheek, or thigh.

The sheep. -- Sheep are raised only accessorily in the Ahaggar,
233 because grass is not abundant enough. But it occupies a large place
[137] in Sudanese animal husbandry.

[136] It is a very peculiar animal with short hair and a long tail. It stands tall, a characteristic which has won for it the name of Ovis
[174] longipes. The Tuareg certainly introduced it into West Africa. Zoologists never refer to it except as Tuareg sheep. Its antiquity in North Africa is well known. The ram of Ammon is pictured with its characteristic form, and it is also recognizable in the splendid rock drawings of Géryville and Tiout. It seems to descend from the Corsican wild sheep rather than from the Algerian wild sheep. Today it is an animal found exclusively in Tuareg camps of the Sudan or
574 in their area of influence.

● 262 Sheep is the dish served at great feasts, and its skin is used as
237 a ground rug, a blanket, or to make harnessing articles.

The goat. -- The goat is the mountain animal par excellence,
233 as frugal an eater as can be, resisting both cold and heat, and able to be content with the meagerest pastures. It is thus quite natural to find many of these goats among the Ihǎggaren.

[136] /252/ The Ahaggar species is small with long black hair. In the Sudan it is different colors -- white and black, or red -- with
[232] short hair; it stands taller than the Ahaggar species and is often crossed with the dwarf female goat in the southern tribes.

136 The origin of the goat is less certain than that of the sheep. Very widespread all over the world, it must have been domesticated at

232 of the average resources of their country and never let their flocks
[272] exceed the number of head necessary for the milk needs of their
[438] family -- about ten to twelve animals per person. The surplus is
consumed or sold to the sedentary people in the agricultural centers.

/253/ The Ahaggar goats give very rich milk which makes
233 excellent butter. The meat, which is a little tough, is eaten boiled,
[234] and the hide is valued for making saddle bags, waterskins, and
[252 262 237] sometimes tents.

The ass. -- The Ahaggar Tuareg have many asses. They do
not breed them properly speaking, taking no care of them and letting
[232] them reproduce freely. Many Tuareg do not know the exact number of asses they have, for they do not use them all and abandon
[422] them in the mountains where they become more or less wild. The
young ones, born in the meantime, do not let anyone get near them,
and they must be trapped and then trained in order to be used.
137 These asses running loose, called *haoulil* by the Ahaggar Tuareg,
have given rise to a legend of wild asses. On this subject, Gautier
cited the adventure of General Laperrine who had a "wild" ass
hunted by his Arab horsemen, only to notice later that the animal
had been castrated.

Although there are no more wild asses in the Ahaggar, it is
[172] nearly certain that there were some. They were pictured in the
rock drawings of the Djorat wadi, and some still exist in Abyssinia
where they are called "onager."

The ass is very much at home in the Ahaggar. It is possible
233 that it was domesticated there. The legends of the Ihăggaren have
[174] kept the memory of the first inhabitants, the Issebeten, who had
[173] only asses and goats.

In their short moves the Tuareg utilize asses to transport baggage,
442 and men and women also use them as mounts. The servants also
[312] take asses to replenish the water supply, making them carry the
[357] heavy waterskins on their backs or under their bellies.

262 237 The ass is never eaten, and its skin is not used.

The horse. -- The horse is not a Saharian animal. In 1929
233 there were four horses in the Ahaggar belonging to the amenokal.
[643 Today there are about twenty of them belonging to the members of
644] his family or to the notables of his camp.

This is an expensive luxury, for these animals must be fed with
[184 barley, and there is not enough barley for the people themselves.
262] It tends to replace the camel for the Sudanese Tuareg.

/254/ The zebu. -- A few years ago the aménokal owned a
[649] small herd of zebus which he had had sent from the Sudan. This
[137] animal is not raised in the Ahaggar proper, and it could not be, for
lack of appropriate pasture.

[312] The zebus serve in the agricultural centers by drawing water.
They are furnished to the tenant farmer by the proprietor of the land,
[427] and they are very poorly fed on hardship rations of hay and grass, or
else they are put in rush pastures, which are generally plentiful in
the agricultural centers.

[438] When the animal is tired, the owner exchanges him if that is
at all possible. The privations which the zebus must undergo bring
about their death in a relatively short span of time, and so in the
Ahaggar it is a question of keeping them alive rather than raising
them. In any case, they never follow the camps in their moves and
never live near them.

361 When we talked about the camp, we told how the search for
136 pasture directed its location.

Insofar as animal husbandry properly speaking is concerned, we
233 361 observe that the small animals -- sheep, goats, and asses -- always
stay in the Ahaggar and move with the camp.

As for camels, this is not the case; they are often put out to pasture far from the tents, watched only by a few shepherds. The majority are even kept in the Sudan 800 kilometers from their owners'

773 had asked God to escape a raid which was coming to pillage her
778 camp. After the raid had passed, however, God kept the women
782 in the state of stone in spite of their entreaties, and it was so that life might be returned to them that the Tuareg came to leave different objects every time they passed near the tomb. The worship
[774] of the Tibaradines is certainly a trace of pre-Islamic and perhaps Neolithic beliefs which must have been deformed through the centuries. One of the statuettes represents a cow and is clearly related to the one found at Silet.

771 The remains of totemism are still affirmed by food taboos.
262 The nobles refuse to eat fish or bird flesh, as well as birds' eggs; only the ostrich escapes this interdiction. On the other hand, a
[825 legend even reports that the uran, or great sand lizard, is the
773] maternal uncle of all the Tuareg.

Some trees are also the object of worship. The Maerua
824 crassifolia which the Tuareg call agar is supposed to be inhabited by a genie which they chase away by striking the tree with stones every time they want to get in its shade. As we have already pointed out, repudiated women who do not wish to stay in the prescribed retirement as imposed by custom and want to take up the state of free living, rely on the tree to take over this retirement which bothers them so much.

754 Sorcery. -- Divination. -- Besides these more or less religious beliefs the Tuareg practice sorcery, divination, and the interpretation of dreams.

Some men, often blacksmiths, are known as sorcerors and make potions intended to cast spells; these are generally made of animal skins /309/ and are given to people who wish to cast a spell
[825] on someone, with the intention of taking him by surprise. The uran lizard plays a large part in the making of these sorceries.

787 Divination, practiced especially by women, is done in several ways and always aims to ask news of absent ones.

We have already mentioned divination through tombs. There is also what the Tuareg call tachilet (the viper). It is done either

727 of captures, however, he had to give half of the captured animals
714 to the lender. In case of failure and death of the camel, he did
426 not have to reimburse him.

721 The men met, discussed the planned expedition, and uttered
726 a ritual formula (narhal allar) which bound them together for the
duration of the expedition, during which time they were to give
mutual assistance to one another.

Then they named a chief who was not necessarily an Amajer /sing. of Imochar - Ed. / but a man renowned for his courage, his /322/ suitability, and his experience on expeditions of this kind. Then the group left, preceded by scouts.

726 All baggage was left behind. Everyone mounted on camel back,
taking only the bare necessities for the road, for it was necessary
to go quite fast and try to keep the animals in good condition.
Before sunrise, the raid was already on its way, and the rapid pace
was maintained without stopping until evening. The men ate only
[262 a few dates at noon, did not take their siestas, and ate a meal
264] only in the evening -- all was sacrificed to the speed of the march,
which was the key to success.

Nearing their goal, the raiders forced their march even more if that were possible, and they often divided into two parties; one was entrusted with seizing the animals and bringing them to a specified point, the other created a diversion in the enemy camps to sidetrack them.

[411] The surprised enemy was attacked with gunshots by a few men
deployed as riflemen, while meharists swooped down on them,
hurled their javelins, and then soon came to hand-to-hand fighting.
The people who were attacked, for their part, tried to find out
the strength of the assailants, and depending on the case they retreated or themselves attacked.

In spite of this martial deployment and the vigor of the attack, these combats were not very deadly, in general, and did not always cause deaths.

565 642 this by peaceful means, at least again in theory. Ancient Egyptian records tell of a Libyan chieftain, Meryey who was peacefully deposed and replaced by a younger brother following a disastrous defeat in battle (Bates, 1914, pp. 114-15, 218 and 221). It is some of the vassal clans that are the biggest numerically and also the richest on a *per capita* basis; and if vassal clansmen pay tribute to their noble "masters" it is only because they choose to do so, because they find it in their interest to keep the nobles on their payroll so to speak. Thus the Tuareg government of the Ahaggar is in fact a kind of republic and not a real monarchy or true military aristocratic autocracy at all.

233 **Livestock.** Herds of camels and flocks of hairy sheep and goats constitute the bulk of the capital investment and so form the primary basis of Tuareg economy in the Ahaggar. The quantity and composition of the total livestock investment has been variously estimated, but the following rough approximations are probably not far from the true figures: camels—12,000, sheep—2,000, goats—20,000, donkeys—5,000 and cattle (zebus)—300 or thereabouts. [231] Donkeys, as we have seen, are unproductive except as beasts of burden, and the cattle are so few as to be of negligible importance. Only some 4,500 camels are actually kept in the Ahaggar while the rest are put out to pasture in the Tamesna region on the northern edge of the Sudan, roughly half way between the Aïr and the Niger Bend. Most of the sheep too are pastured outside the Ahaggar proper, mainly in the country around Tin Zaouaten, southwest of the Ahaggar and northwest of the Tamesna.

235 262 The Haratin of the Ahaggar keep chickens, but only the eggs are eaten as a rule. The Tuareg eat neither eggs, fowl nor fish, but we will discuss this further in the section on *Nomad Diet* in the following chapter.

232 It has been said that the Tuareg have no special breed of riding camels but that likely looking animals are picked out early and given special training for use as mounts. The fact remains, however, that the young of famous stud camels are always the preferred choice, and these animals are specially marked shortly after birth. The method of marking consists of pinching up three small folds of skin in a row, about 2 to 3 inches apart, along

usually satisfied with milk, "akh, " fresh ("akh oua kefalen" 264
|ɛ][⁖ ⁚ ⁙) or sour ("akh iezza", # ⁚), at
the hour when the camels, sheep, or goats come in from
pasture.

The basic food of the Ahaggar Tuareg consists of bechna, 262
"inelli" (white-grain sorghum, Graminaceae), dates, "telni, "
and milk, "akh." |⁚ ⋯ || +

But their country provides them with many resources 22
which they are careful not to neglect, especially the poor, 556
the "tileqqiouin" |⁚ ⋯ ||+ , who constitute the majority.

All the "imr'ad" go to harvest the grains of "toulloult" 243
and "afezzou." Women, children, youths, negroes and 221
negresses go into the wadis to gather the harvest, which takes place from May to June for "toulloult" and from July to the end of September for "afezzou." /29/

[000]

Dautheville

Idelés (Koudia)

Usually, before the harvest several wadis are forbidden territory, and camels are not led there until the harvest is finished.

The produce is gathered and put into hide sacks. After the grains have dried, they 252
need only to be put onto small trays of "afezzou, " called "tissiin, " which are shaken, and the hulls fall off and remain on top. The grains are ground to powder, and a kind of gruel is made with water or butter.

The Tuareg are also very fond of "tikamarin" |O]⁖ + 234 252
, cheeses as hard as wood which they get from Aïr. They 262 438
grind them in mortars and mix them in their food.

They very seldom eat meat, except that of game which 262
they can kill in a hunt: gazelles, mountain sheep, and 224
antelopes. But often they prefer to smoke this game in order 251
to go and sell it in the Tidikelt. 438

262
The nobles eat better, at least those who are well-to-do. 243 556
In the Ahaggar especially they own cultivated land in the 565
"ar'erems" (villages), where they grow wheat, "ired," barley, 423
"timzin," and bechna, "inelli"; but usually they sell their 439

[137]

Dautheville

Trees Called "Ahatés" (Acacia Albida) at the Tillemas of the Tessht Wadi (Koudia).

wheat and barley to the natives of the Tidikelt and are content with bechna, of which they are very fond. They claim that bechna is less heating to the stomach than wheat or barley. [824]

The rich allow themselves the luxury of drinking tea, but 272
tea and sugar are very expensive, and they do not misuse them. 556
On the other hand, they do not hesitate to beg for them shamelessly. 263

When the year is bad anything seems good to the poor to 222
assure their subsistence. In such years one sees them eating 262
/30/ "berdi," or "taheli," (Typha angustifolia, Typhaceae); 735
ground carob seeds of "talhas," or gum trees, which they call 252
"tahaha" • ⁞ ⁞ + ; "tanékfaït (Diplotaxis duveyrierana, Cruciferae); fruit of the "teborak" (Balanites aegyptica), which they steep to take out the bitterness; and even leaves of the "aremmas" (Atriplex halimus, Salsolaceae), which they boil.

In short, nature keeps food resources for them which prevents even the poorest from dying of hunger.

Should one see here some agreement with what we have 114
read in Dozy, or might the uran have been a "totem" among 825
the Tuareg, as among the Redskins of America?

Nobles do not eat the "dobb" (star lizard) either, which 262
is called "aguezzeram" in Tamashek. As a reason for this 565
abstinence, they quoted me these two lines of nine syllables: 825

Our ekcher' aguezzeram idit [539]
Iladhou ichchaden ilir'it.

This means:

"I do not eat the aguezzeram because it smells bad and has a rough skin" (1).

1. Iladhou is put instead of "ili adhou." Similarly, ilir'it is put for "ili ir'it." Ir'it, plural ir'ten, means hide (of beef, camel, etc.).

Finally, they firmly refuse to eat chickens and eggs, and chickens are found nowhere among the Tuareg, except among [231] some "harratine" /Haratin/ Arabs of the Ahaggar villages. They claim that this abstinence dates back for a long time. Aziouel ag Ser'ada when pressed ended by telling me that it was because chickens seek their food in manure. In the Niger, according to a study by officer-interpreter Merle, the French are called egg eaters. But I believe that the following is the 262
real reason for this abstention: The Tuareg, like all the 565
825
Berbers, had embraced Kharijism. Among the chiefs who took 773
part in the insurrection of the Kharwarij /plural of Kharijite. Ed./ was Tarif, who made the first invasion into Spain (the city of Tarifa still bears his name). His son Salih, or Salah, claimed to be a prophet and composed a new Koran. Elijah, or Elias, son of /62/ the latter, openly remained Moslem, and it was only Salih's grandson, Jonah, or Younes, (end of the eighth century), who spread the new doctrine, which was a much modified Islamism. According to one of the precepts of

this doctrine, the scholar Dozy tells us: "There was no muezzin, 262
or crier, to call to prayer; people were governed by the crow 565
of the rooster; so no one, except in case of dire necessity, 825
might kill roosters or hens or eat eggs" (1). 773

1. Essai sur l'Histoire de l'Islamisme, by R. Dozy, pages 348 and 349. Neither mosques nor muezzins are found in Tuareg country. See also l'Histoire de l'Afrique Septentrionale /History of North Africa/, by E. Mercier, pages 228 and 255. Volume 1. [171]

Legends and stories are also known on the subject of 773
Ahmamellen and his nephew Elias. Hanoteau told them to us. 823
At Tamanrasset (Ahaggar) the Tuareg showed us a curious breech in a large "gara" that bounds the horizon to the east. They call it "Tiouit-n-Elias" (Elias' cut), and they say that Elias made this breech with one stroke of the "takouba." The piece removed, an enormous rock, lodged in a wadi three kilometers from there, and we were shown it in passing. The breech has also been named "Elias' Breech."

Elias is the Arabic translation of Elijah, and Younes that of [551]
Jonah. These two proper names are still used among the Tuareg. [174]
Might there not be a relationship between this Elias and Elijah, son of Salih?

The Tuareg say that Ahmamellen was a man of extraordinary 174
size and strength, and that he was the equal of an army. Might 773
it have been Salih himself who claimed to be a prophet, then disappeared in the east after having told his followers that he was the Mahdi and that he would come back to fill the world with justice when the seventh king should be mounted on the throne?

They use camel hair to make rope. They are fond of camel meat, and it is they who supply the markets of the Tidikelt with it. 237 243 262● 439

There are very few cattle in the Ahaggar, barely thirty, and almost all these belong to Si Mokhammed ag Otsmane, of Tazerouk. They are used to draw water from the wells into the ar'erems. The pasture is scanty, and besides the cattle easily wear out their hooves on the rocks and stones. 233 492 [312]

In the Koudia, because of the cold which prevails there and the high altitude, there are many small turrets of dry stones, /65/ empty inside, in which the Tuareg confine lambs and kids at night to shelter them from the cold. 233 343

The Ahaggar do not have a large number of meharis, and they do not like to sell them, especially the good ones. Among themselves, to set the value of a mehari, they say, "Such a mehari is worth two, three, or four camels." All their meharis are trained to start at a gallop. The Tuareg has great patience with the training of his mehari and never mistreats it. He confines himself to persuading it by voice and foot, and it is perhaps for this reason that the Tuareg mehari is much more silent than the Arab mehari. 233 [435]

The foundation of the pastures of the Ahaggar is aremmas (Atriplex halimus, Salsolaceae). This plant is quite laxative. So when the year is bad and drought prevails, the Ahaggar are found emigrating toward the Adhar'. There are fine pastures of "had" (Cornulaca monacantha, Salsolaceae) in the south of Tin R'arhou, but there is no water. Moussa ag Amastane /66/ intends to have wells dug there and has requested our help and advice for this purpose. 137 233 [312 648]

As a rule the Tuareg let their camels out to pasture without herders, and they find them again at the well or by tracking, unless they entrust the herding to children or negroes. 233

/67/ A young camel is called "abal" without designating its age. A camel in general is called "amadjour," plural "imoudjar," or else "amiss," plural "imnass." A female is 192 233

5: Nicolaisen E-4,5 (1951-1955) 1959

MS25 Tuareg MS25
Ahaggar
Air [illegible]

During drought periods the uttermost poverty is the lot of the Ahaggar Tuareg,
132 who must then rely almost exclusively on agricultural products for their nourishment.
●262 But in years of abundant rainfall they have much milk during the winter,
[234] and they make butter and cheese to be used during the hot season when milk even
in good years is scarce. They then also have meat for their sustenance but this is
less important than milk-food.

In good years the perennial plants do not form the most important fodder of the
137 domestic animals. For heavy rainfall will as if by magic change the barren country
outside the valleys. An extremely rich vegetation of annual grasses and herbs
233 springs up, and these tender plants constitute the very best fodder. But as, owing
to the irregularity of the rainfall, annual pastures will not appear every year, it is
difficult to breed other animals than goats and camels to which can be added
donkeys used exclusively as beasts of burden and for riding. It is true that most
Ahaggar Tuareg have a few sheep but none of them have cows (zebus). Cowbreeding
and also effective sheep-breeding cannot be practised in a country like
Ahaggar where for a period of years there may be no pastures of annual plants.
In dry years the thorny acacias form the most important fodder of camels and
goats, but the leaves of these trees cannot be eaten by cows and only with great
difficulty by sheep.

In Ahaggar rain may fall at most seasons as the country is situated on the
132 frontier of two different rainfall belts, namely that of the Mediterranean where
rain occurs mainly in winter, and that of the Sudan where rain will fall late in
summer. For a long period of years rain has fallen most abundantly late in summer,
but according to Dubiéf this has not always been so. Not many years ago rainfall
was almost equally common at all seasons (Dubiéf 1947, p. 7–23), and Ahaggar
137 still has the characteristics of two distinct climatic zones, likewise as botanically it
belongs both to the Mediterranean and to the Sudan.

On my camel journey from Ahaggar to Air via the wells of In Ebeggi and In
[132] Azaoua in April 1955 I experienced a rapid change of climatical and botanical
conditions. At the outskirts of the southern slopes of the Ahaggar Mountains a
persistent vegetation is very scarce in the valleys, and between the two abovementioned
wells there are practically no permanent plants. Broadly speaking the
[133] desert region between Ahaggar and Air is nothing but plains of gravel and stone
interspersed with rocks and hills. But a little scattered rain will occur even in these
[132] regions and gives rise to annual pastures which are utilized by passing caravans.
Otherwise the country is uninhabitable.

In the northernmost part of the Air massif acacias and tufts of perennial grasses grow in most valleys as in the lower parts of the Ahaggar Mountains. But compared with Ahaggar permanent vegetation is very rich and in places forms almost impenetrable jungles of trees and brushwood. Further south in Air perenniel plants including trees are very common also outside the valleys, and the country south of the massif very rapidly changes into a kind of steppe or open savannah. The com-

262 Even when grazing is good stock-breeding products are less important for food
in Ahaggar than in Air as is illustrated in fig. 3 depicting the relative importance
[222] of milk food and vegetable food. A small part of the vegetable food is provided by
collecting seeds of grasses and herbs, while roots, stems, and berries of wild plants
are less significant. The bulk of Tuareg plant food consists of millet, barley, wheat,
[241] and dates. In Ahaggar many Tuareg have gardens with wheat and barley cultivated
[563] for them by black-skinned agriculturists generally known by the Arab word
Haratin (*Izzegaṛen* to the Tuareg). But most Ahaggar Tuareg acquire the bulk of
438 their plant food from caravan trading with the oases of Tidikelt (dates) and with
262 Sudanese villages as far south as Zinder (millet). Even in years of drought they can
obtain millet from the Sudan in exchange for rock-salt broken at Amadṛor north-
east of Ahaggar. In Air caravan trading with salt seems less necessary to Tuareg
subsistence, although there are also in this country Tuareg who trade with salt
from Amadṛor or Bilma. Most pastoral households however have a fairly regular
[234] surplus of livestock, butter, and cheese which can provide for the necessary amount
[563] of millet bought in Agadez or south of the massif in Damergou. There are also
241 in Air a great many negroid agriculturists from whom pastoral Tuareg can buy
vegetable products. But millet, which forms the prominent part of Tuareg plant
262 food, is grown to a very slight extent by the agriculturists of Air. Dates are important
[438] in particular to the Ahaggar Tuareg who acquire large quantities from the oases
of Tidikelt. There are also a few Ahaggar clans the members of which own half-
wild palms with dates of an inferior quality, as there are Tuareg who have a few
palms growing in their garden plots. In Air dates are not so important for food
but even there pastoral Tuareg may have some palms. Among the Tuareg of
Tassili-n-Ajjer it is very common for pastoralists to sow wheat and barley in the
river valleys when these have been heavily flooded (Nicolaisen 1954, p. 83, 88),
and this primitive agricultural method was apparently known also to the Ahaggar
Tuareg in the past (Duveyrier 1864, p. 372). More recently many pastoral Tuareg
[312] of Ahaggar and Air have taken up agriculture by means of irrigation. There seems
to be a tendency towards semi-nomadism among the Tuareg who are very dependent
[221] on vegetable food derived from agriculture.

The Negroes Of The Sahara.

136 In the above section on Tuareg ecology it is stated that Air climatically and botanically is closely linked with the Sudan. This is true also zoologically as the Air fauna contains a great many species of birds and mammals characteristic of tropical Africa. The bird life of Air seems very akin to that of the Sudanese savannah, and, for instance, guinea fowls are extremely common even in valleys of the northernmost parts of the massif. As examples of tropical mammal life in Air we may here mention that the wart-hog lives in Central Air, and that oryx antelopes

[TEXT CONTINUES ON p. 76]

5: Nicolaisen E-4, 5 (1951-1955) 1959
MS25 Tuareg MS25
Ahaggar
Aïr

262

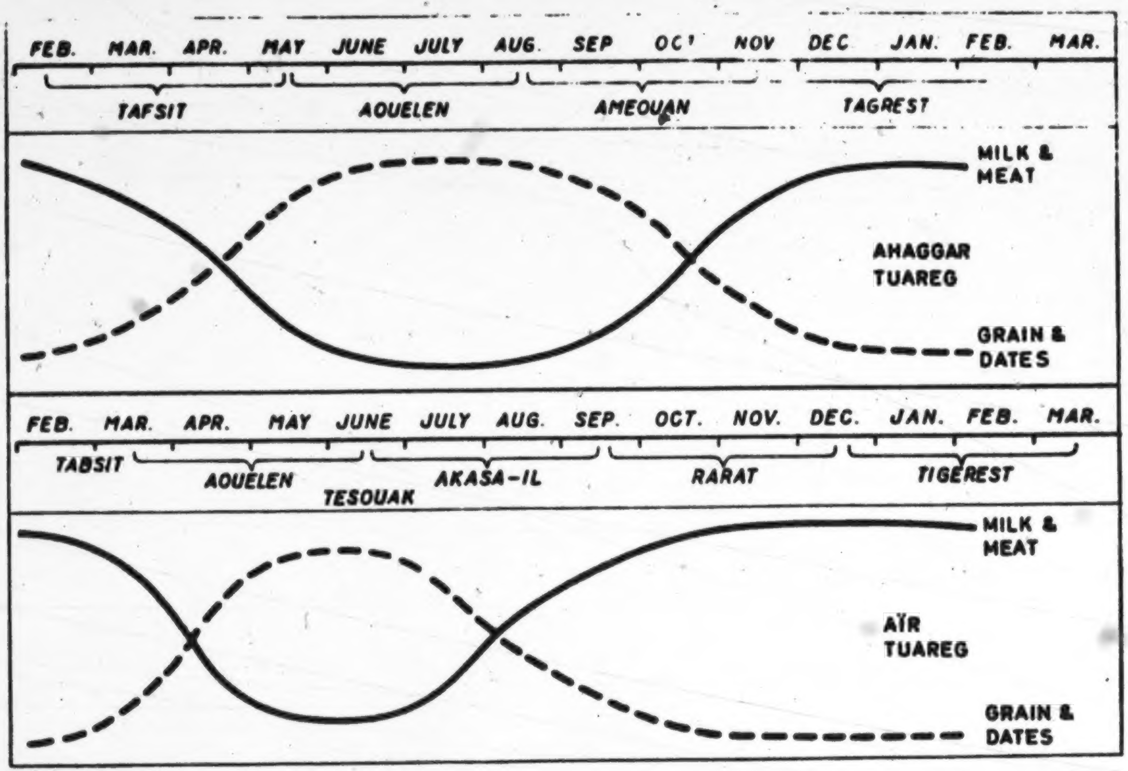


Fig. 3.-The relative importance throughout the year of food derived from stock-breeding and vegetable food mainly comprising agricultural products. The curves describe conditions in good years.

565 Tuareg of the Iboglan section of the Kel Ṛela clan, but as he now lives outside of
614 Ahaggar the payment is made to the Amenokal.

643 In the past certain vassal clans or matrilineages of clans paid their tiouse to
651 noble Kel Ṛela Tuareg other than the Amenokal, while apparently other clans or lineages gave tiouse both to the Amenokal and to other Tuareg of the Kel Ṛela clan. But according to my investigations this did not apply to vassals of the Iseḳḳemaren class, who should pay tiouse to the Amenokal only. Duveyrier states that three Kel Ṛela sections (the Iboglan, the Inemba Kel Tahat, and the Inemba Kel Emoṛi) each had their particular vassals constituting clans or parts of clans (Duveyrier 1864, p. 375 ff.). Benhazera gives a more detailed account of relations between noble and vassal Tuareg. According to him most vassal clans paid tiouse to the Amenokal, but some clans or parts of them also gave this tribute to other noble Tuareg. And apparently there might within one and the same noble section be several Tuareg who had their individual vassals from whom they received tiouse payments (Benhazera 1908, p. 139 ff.).

Whole groups of Tuareg outside of Ahaggar also paid an annual tribute known
643 as tiouse to the Amenokal or to other prominent noble Tuareg of Ahaggar in order
651 to avoid raiding by the Ahaggar Tuareg. Thus the Adṛaṛ-n-Ifoṛas Tuareg (the
579 Kel Adṛaṛ) gave a skin tent and a camel annually to the Amenokal, but in spite of such annual tributes foreign Tuareg groups were frequently raided. If foreign Tuareg paying tiouse to the Amenokal were raided by people of Ahaggar, the Amenokal, according to Foucauld, had the right to a tribute named *ennehet*, about one third of the booty taken, to be paid him by all raiders whether noble or vassals. But raiders who were vassals of the Amenokal's drum-group should also give him half of the booty left when one third had been given. If the foreign group raided complained to the Amenokal to whom they paid tiouse for protection, he might return some of the animals taken, but never all (Foucauld 1951–52, III, p. 1347 f.).

The tiouse paid to the Amenokal and other noble Tuareg by their vassals was
565 also made in order that they should not be attacked or exploited by other Tuareg.
614 But the relation (*temaẓlait* literally meaning "the root of the nail") between vassals
651 and individual noble Tuareg had also an economic function, and was apparently of great value to both noble and vassal Tuareg. To make this clear I shall now briefly return to ecology.

In Ahaggar camels and goats are extremely complementary to one another.
233 The camel supplies the Tuareg with milk, but with very few other products. And
511 the Tuareg cannot always get milk from their she-camels which yield very little
[234] when pastures are dry. When grazing is good, camel's milk is important for food,
[262] but it is not well fitted for churning butter, and cannot be used for cheese. Camels are occasionally killed, but as their meat is not very suitable for drying, the Ahaggar
[574] Tuareg will kill camels to utilize their meat only when many people come together, as for instance at a marriage. Camel's hide is not very important in Tuareg craft,
[281] as tanning is not practised, and Tuareg camels have little hair which is used only
[237] for the manufacture of a few insignificant objects.

for the manufacture of a few insignificant objects. To most Ahaggar Tuareg the 233 511 camels have little direct economic value. But in raids of the past camels were very valuable riding animals, and they were then as now extremely important for caravan [492] trading, which provides the Tuareg with most of their vegetable food. [439]

The economic role of goat-breeding is very different. Goat-products play a very comprehensive part in Tuareg nourishment. Goat's milk is not only drunk, but is [234] also made into butter and cheese which can easily be stored. Goat's meat is superior to camel's meat, and one goat does not contain more meat than can be eaten quickly [262] by the members of a normal household. Furthermore goats are very important in Tuareg craft; tents, waterbags, and containers for different sorts of liquid and [281] solid food are made predominantly from their skin, which was formerly also [291] employed for whole garments. Goat's hair is extremely useful as material for ropes [283] with which domestic animals are tethered, camel-loads are fastened, and the like.

Pastoral Tuareg could not survive in Ahaggar without goats. They might be able to subsist without camels, which can be replaced by donkeys as beasts of burden. But camels make life much easier to the Ahaggar Tuareg, who nowadays as in the past base their economy mainly on camels and goats. I think it is fairly correct to say that most Ahaggar Tuareg get their milk-food from goats, their vegetable food from caravan trading by camels.

Formerly the true vassal Tuareg of Ahaggar were not allowed to possess camels, [422] which were owned exclusively by noble Tuareg. Foucauld says that 100–150 years [565] ago the vassals had no camels, but he does not mention his source of information (Foucauld 1951–52, II, p. 534). But it is confirmed by many Tuareg that throughout [114] the 19th century the vassals had not many camels, while they were rich in goats of which the noble Tuareg had very few. Goat products were given to noble Tuareg by vassals. As mentioned, goats and butter form part of the tiouse payments to 565 the Amenokal, and were also an important part of the tiouse paid to other noble 651 Tuareg of the Kel Ṛela. But the noble Tuareg who were masters of the small [421] temażḷait-units within the drum-group could apparently claim practically whatever they wanted from their vassals. The noble Tuareg, Duveyrier says, in reality had all rights over their vassals' property. But they were themselves interested in having rich vassals, and would not discourage them by claiming too much. When in need of riding camels the noble Tuareg could freely take animals from their vassals. The vassals had also an obligation to feed their noble lords, who at certain times would camp among them (Duveyrier 1864, p. 334ff.). This is also stated by Benhazera, but he claims that the vassals would not necessarily give everything demanded by noble Tuareg (Benhazera 1908, p. 54). The noble Tuareg of to-day have not ceased to claim food products and the like from their vassals. Poor noble [431] Tuareg frequently ask gifts from their vassals, and there are even noble Tuareg who temporarily camp close to rich vassals from whom they acquire part of their food. Vassals may also lend their she-camels to noble Tuareg, who will return the animals when milk-yielding stops, and this is considered an old privilege of the nobility.

Pritchard 1940. – Foucauld 1925–30, I–II). 3) As mentioned (p. 113) camel's milk 171
is not well fitted for churning butter, but it can be used as is the case among certain 234
Arab bedouins of the Northern Sahara and according to my investigations possibly
also among the Kel Ajjer who live close to Arab pastoralists, and among the Moors
(Monteil 1952, p. 73). In most Tuareg groups camel's milk is only occasionally used [302]
for butter which is not eaten but employed as a hair ointment. Among some East [262]
African cattle breeders butter is also churned for this very purpose. 4) All Tuareg
and perhaps all Arab camel-breeders use the stuffed skin of a deceased camel-calf
to deceive the mother animal during milking – for camels like cows will not generally
yield milk unless their calves are present. This custom is widely distributed
among cattle-breeders of the Old World. 5) Camel's urine is considered curative 171
and purifying, although it is not used for cleaning milk bowls or added to milk or butter 237
as among certain East African cattle-breeders. 6) The custom of bleeding living 525
camels to utilize their blood is practised by Tuareg when lost in the desert without [261]
water and food. This very custom is also practised by the Tebu and by Arab
pastoralists of Arabia. Among the latter camel's blood is apparently used frequently
in periods of hunger (Cauvet 1925, I, p. 701. – Finbert 1938, p. 39). This custom
may have been more common among camel-breeders previous to Islam which
forbids the use of blood. 7) Tuareg camel-calves which are very eager for milk and 171
difficult to wean may be cut in two or three places on the bridge of the nose; the 233
wounds will hurt when the calves try to suckle. On adult animals scars from these
wounds will appear as small bumps. They are believed to add to the beauty of riding [825]
camels and are nowadays made predominantly for aesthetic reasons. As a means
to prevent suckling the same method is also applied to oxen by southern Tuareg,
and Mr. Huntingford has informed me that Nilo-Hamites of East Africa have the
same custom. 8) In the south camels are not always branded with a red-hot iron as 171
among the Northern Tuareg and the Arabs. Most Kel Ferouan clans use earmarks 233
cut with a knife, and this is the case of other Air Tuareg, e.g. the Kel Fadei, some 422
of the Ikaskazan, and the Ifadeyen. Earmarks are possibly also used by some of the
Moors of the Western Sahara, who still use certain Berber words in connection
with camel-breeding (Monteil 1952, p. 103).

Tuareg camel-breeding has traits in common with cow-breeding, and they 171
may be due to historical relations between breeding of camels and cows. The 174
domestication of the camel may have taken place in a pastoral culture similar of 233
the East African cattle complex. In that case the type of dwelling characteristic of 342
camel-breeding may have been a barrel-vaulted hut or tent. Pastoral cow-breeders
of Africa and Asia generally use this type of dwelling, and huts or tents of arch
construction are extremely common among the Tuareg. Mat-covered arched huts 184
like those of Air are known also to the Kel Geres, some of the Eastern Ioullemmeden, 342
and to other Tuareg further west in Southern Tuareg country – in particular
those living close to the Niger (Lhote 1947, p. 71, 79. – Nicolas 1938, p. 62; 1950a,
p. 156f. – Barth 1857–58, I, p. 372f., 597f., V, p. 201. – Delafosse 1912, I, p. 334. –

136 /33/ Near the water points, numerous insect-eating birds seek nourishment. Let us mention in particular a gray swallow which lives the year round in the Ahaggar, and a charming black and white bird, the moula-moula, which is considered [825] a messenger by the Tuareg and which accompanies travelers, rapidly becoming very tame.

At Tamanrasset, Bengalis (mange-mil /literally: "eat-millet"/), imported from Agadez, breed rapidly and populate the gardens, which they ornament with their red plumage.

Crows are seen almost everywhere. Vultures soar very high, so high, say the Tuareg, that the sun burns their head feathers, and when an animal dies in the desert, the rapacious birds arrive mysteriously from "nowhere."

Falcons and buzzards circle over the pasturelands in search of food.

Reptiles abound in the Ahaggar. Snakes and vipers live in and around the wadis, burrowing among the clumps of thorny vegetation and tree roots. The Tuareg fear everything that crawls. Several types of vipers (tachilt) live in the Ahaggar; some are gray, others tawny (horned) or spotted. One may encounter, but rather rarely, a sort of cobra called hench-lefel. Some snakes grow to be more than a meter long.

Lizards of all sizes live in the most desolate places. One kind, small, sand-colored, flees terrified at the approach of man in the wadis and on the regs.

The dob prefers rocky places. With its large, spiked tail, this animal has an antediluvian aspect. It plays a very important part in Tuareg stories. Children play with it as with [262] a toy. Its flesh, considered edible, is far from tasty.

The uran, a large gray lizard, possesses a redoubtable weapon in its long, flexible tail. The Tuareg call it their [825] maternal uncle and ascribe to it dauntless courage. It is said that the uran attacks nobles but /34/ refuses to fight Negroes; [262] the latter eat the flesh of the uran, having no kinship tie with it.

241 /74 cont./ Millet is sown after the wheat harvest is finished. Two species are found, one called Ahaggar millet and the other Sudanese.

The yield varies from eight to ten for one. The annual production is about 60 metric tons. The ears are rather thick but are looted by birds, above all the Bengalis, called "mange-mil," which originate in the Sudan.

The tomato is the chief vegetable of the region. Several varieties are sown; there may be a native one, but the harratin have long used the seeds given by the commune. They harvest the seeds themselves indiscriminately; there may be some degenerate ones among them. There is usually a surplus production of tomatoes. They are sliced in two, then dried in the sun in order to preserve them for sale and for sending to the Ajjers, the Tidikelt, El-Goléa and, above all, to Ghardaïa. The method of cultivating them is most simple: The young plants are thinned out, haphazardly, at distances varying from 30 to 60 centimeters, depending on where the hoe happens to fall. When the tomato plants are grown, the guemoun is an indescribable tangle. It is a very rare gardener who puts up props for the plants.

Nearly all the native gardens have several pumpkins. There are two types, one called the Ahaggar pumpkin, which grows to an enormous size, is yellow, not very sweet, and is less esteemed than the variety called the Métlili pumpkin, which is smaller, greenish, and very wrinkled, and whose meat is much sweeter. The pumpkin constitutes the essential ● [262] food during the month of October and even during November.

Beans grow marvelously well, but only a few gardeners plant several guemouns of them.

/75/ Agricultural Centers

The Ahaggar has numerous agricultural centers, veritable oases, of unequal importance. The location of these gardens

241 /75 cont./ is always the same: in a living wadi, between two rock shelves. They are to be found, then, within a radius of about 100 kilometers from the upper summits of the Atakor.

The gardens string out along the wadi, using to the best advantage the cultivable and irrigable land. An impressive checkerboard of guemouns served by lines of foggaras and séguias testifies to the industry of the harratin. The green patches of early wheat among the grayish natural vegetation make a curious sight; this verdure seems unreal. The agricultural centers are always found in picturesque surroundings. The villages have rare houses of toubs or of dried bricks, [342] but more common are tahli zéribas /reed shelters/. Misery there is endemic, and the word "destitution" takes on its [511] most absolute sense here.

I have personally known families, one of them with [262 511] nine children, who knew upon getting up in the morning, at certain times of the year, that they had nothing to eat during the coming day and that it would be the same the next day and the days after that. Only the charity of one of their fellows, scarcely any better off, would save them from starvation.

It is true that lack of foresight is a determining factor in bringing about this destitution, but it is not the only factor; one must also cite the low fertility of the soil, the frequent lack of sufficient water, above all after a long dry period, the conditions of the agricultural contract which in effect prevent the hartani from developing a passionate interest in his land, and, lastly, the limited views and complete lack of initiative that characterize the harratin. It must be noted that the Tuareg are hostile to the development of agriculture; this hostility is scarcely a reasoned one; it is a matter of a kind of nomadic atavism, augmented by a desire to keep the traditional practices intact, and also by a fear of seeing the Ahaggar penetrated by foreigners who, undoubtedly, could make the land produce and, in particular, develop the /76/ palm groves, but who would not be hereditarily subordinate to their authority.

233 /83 cont./ The Ahaggar goat (a goat: "tirsi"; plural: "oulli") is small, lively, a good walker. It has long black hair, but crossing it with Sudanese goats gives offspring with black and white coats. Milk production is very variable according to the seasons and the abundance and quality of the pastures. A very good milch goat may produce nearly two liters of milk per day, a month after having given birth. The average production is about one liter a day for the two milkings. Goat's milk furnishes butter, "oudi amellen," which is cooked to preserve it: "oudi"; it also is made into the different cheeses (let us recall that camel's milk is used only for drinking).

It is estimated that there are about 20, 000 goats in the Ahaggar, although there may be more. The Tuareg keep one male for about 50 females. The Ahaggar goat bears one [262] kid, sometime two, but very rarely. The male kids are always eaten young; they constitute the bulk of meat consumption by the Tuareg.

[283] Goat hair is used to make ropes of all sorts, and we shall see how the hide is used in making all of the Tuareg furniture.

Sheep raising is very limited; the number of head would hardly come to a tenth of the caprine livestock, and most of the sheep are found in the Tin-Zaouaten region.

The sheep raised in the Ahaggar is a native of the Sudan; long legged, it has no wool but long stiff hairs, generally fawn colored. Its meat is excellent. It is a robust animal, a good walker, but according to the Tuareg does not bear up well during the dry years in the Ahaggar, the pastures not being sufficiently nourishing. This sheep /84/ accomplishes considerable feats; the Tuareg drive flocks from the Adrar des Iforas to the markets of the Tidikelt and the Aïr in the Ahaggar. These migrations are carried out, of course, in the winter, but the regs crossed are truly poor in water points, and the pastures are sufficiently rare to make these journeys a remarkable exploit.

233 [262] /84 cont./Ewe's milk is mixed with goat's milk; the hides are also used in all sorts of leatherwork. Mutton is considered choice meat and is the preference for serving to an important guest.

The ox is imported from the Sudan; it is a zebu with the characteristic hump. It is used for drawing water in the agricultural centers. However, it can live in freedom in the wadis of the Ahaggar. The amenokal owns a herd which has gone wild: when he wants a beast, he must have it shot. The oxen eat the tahlis which grow abundantly on the rocky shelves of the wadis; they drink from the numerous gueltas. This ox is a sturdy animal capable of going from the Tamesna region to the Ahaggar across desolate regs.

Milk production is practically negligible, since there are at most 300 bovids /sic/ in the Ahaggar.

The hide is used to make the large dellous /skin sacks/ for drawing water and the bottas for keeping butter in.

The bull is called: "essou" (plural: "issouan"); the cow: "tessout" (plural: "tissita").

The donkey ("eïed"; plural: "ieïdan") is, perhaps, the animal best adapted to the Ahaggar. The Tuareg say: "It eats everything, green or dry." It is of average size, with a rather light coat and a large darker cross on the back. The donkey [492] is used for camp chores; it goes to fetch water and wood. It carries nearly the whole load when moving; it is the mount of the women, children, and Negroes. Some travelers claim to have seen onagers in the Ahaggar; these were actually donkeys reverted to the wild state: the Tuareg, not being able to keep them near their camps because of the paucity of pastures, /85/ let them run free. Thus it is that herds of donkeys are seen in silhouette on the mountains or fleeing in the wadis as men approach. The donkeys drink at the permanent water points, and their habitual approaches to them are marked by narrow, well-trodden paths.

233 /85 cont./ When the Tuareg want to recapture some of these animals, they organize veritable battues and must use a great deal of cleverness and energy to succeed. It is necessary to break these donkeys in order to fit them for domestic use, for many of them are born wild.

It is estimated that there are 5,000 donkeys in the Ahaggar, but this figure is certainly too conservative.

● [262] The flesh of the donkey is not eaten, nor is the milk of the female drunk.

A few horses, most of them originating in the Sudan, are to be found in certain agricultural centers. A "luxury" animal, the horse (*aïs*) cannot live off the Ahaggar pastures. When well nourished with barley, it bears the climate perfectly well and can be used as a mount in the mountains of the Ahaggar where water points are numerous.

Lastly, chickens are raised by the *harratin* in all the 231 agricultural centers; they are lean fowl which find practically all of their own food. The *harratin* chiefly eat the eggs, [439] rather rarely the meat, which is sold to the Europeans.

/87/

IV
Material Life

Dwelling

342 281 The Tuareg, as true nomads, use the tent for habitation, and sometimes, in exceptional circumstances, the *zériba*.

The Tuareg tent is made of skins sown together and specially prepared. Its red tint, which harmonizes with the dominant tones of the Ahaggar landscape, is agreeable to the eye. For making the tent (*éhakit*), goat, sheep, wild sheep, and, very rarely, cattle skins are used; the skins of wild sheep are considered the best. After being stripped of its hair, the

291 /103 cont./ occasions. The "raïki" is another veil, as large as the tabarikant and made of wool, but white; it is also very rare.

The Tuareg woman does not wear a sarroil but a kind of knee-length skirt, a simple piece of cloth tied around the waist, called "assedjebès." Young girls begin wearing assedjebès when they are nubile.

The woman wear ighatimen for footgear, carry tera, and all have a taralabt slightly different from that of the men. The iremdan is often carried without a case. In winter the tabrok (dokkali) is also a feminine garment.

[854] All of the young children are naked; later they put on the blue gandurah; the boys have a sarroil toward the age of eight or nine. At about fifteen, they begin to wear the veil.

Food

• 262 The Tuareg are particularly frugal eaters, and their condition of life does not predispose them to a finely prepared cuisine. Tuareg food has nothing about it to flatter the tastes of a gourmet. The few /104/ dishes palatable for a Frenchman [177] have been borrowed from the Arabs and will not be mentioned here.

The basic elements of the Tuareg diet are: millet, milk, and dates. Millet (enelé) comes from the Sudan or is harvested in the Ahaggar as a summer crop; the latter, whose grain is smaller, is better liked but is insufficient in quantity.

252 Millet (the "bechena" of the Arabs) is crushed with a pestle and winnowed to keep only the white flour. This flour is sometimes eaten just as it is after crushing: this is the "tibik" used on the trail by the hurrying cameleer, and it is sometimes used even in camp.

Also called tibik is a more complicated preparation: millet is crushed, winnowed, then washed and put in a tarahout. Heated pebbles are buried in the grain until it become slightly cooked or rather roasted. The progress of the

252/104 cont./ cooking is determined by the pleasing odor that comes from the dish. This grain is next ground together with dried dates. The powder thus obtained is eaten without further preparation.

The "arahara" has a more complicated recipe: crush the millet so that a very fine flour is obtained, crush some dates, and add a little water to form a paste, crush some "tikamarin" /cheese/; mix flour, date paste, and cheese powder together; add a lot of water until you have a liquid resembling milk. Drink cool in summer.

"Asink" is the Tuareg national dish: crush millet so that you have half of it in fine flour and the other half in coarse grains; separate the grains from the flour and pour the former in a pot of boiling water; cook for two hours until the bloated grains form a rather liquid gruel; pour the flour into the gruel, stirring the mixture with the "esseroui" (a wooden paddle used especially for the asink) with the pot still on the fire; obtain a rather thick consistency, dish into the tarahout, add milk if possible, and serve hot. When there is no milk, butter may be added, or the asink may be eaten as is.

[272] /105/ Milk, another basic food, is drunk whole as soon as it is drawn, or is mixed with sour milk, or blended with whey. To make butter, milk is poured into an "adjiouer" (the "chekoua" of the Arabs) and sits for a day, preferably in the sun, causing it to sour rapidly. The sour milk is then poured into another chekoua, which is stirred until a ball of butter is obtained. The sour whey left in the chekoua is drunk during the day.

●[262] Fresh butter ("zebda" in Arabic) is called "white butter" (in Tamashek: "oudi oua amellen"); it is soon eaten, but only a small amount. Most of the product is transformed into "dahan" (Arabic -- in Tamashek: "oudi"), which can be kept a long time. White butter, with a small quantity of dates added, together with a few grains of wheat or millet and

252 /105 cont./ several stalks of a plant called "aïnessis, " is cooked for a very long time. When it is ready, it is poured into the "tahatiat" or the "arraïan" for keeping. The tahatiat is a kind of guerba /waterskin/ made with skin from a camel's neck and still has the original curved shape. The arraïan is shaped like a demijohn; it consists of a piece of camelskin molded in a hole dug in the ground, filled with camel dung and gravel, tied securely at the mouth by a cord, and thus dried and hardened.

415

"Tikamarin" is a cheese made from whole milk in the following way: a young goat is killed and its stomach, still full of milk, is carefully kept; the milk is allowed to harden in the stomach pouch, then is carefully preserved. A piece of this "seed" cheese, about the size of a gaming die, is plunged into a tarahout containing five to eight liters of milk. After a day the milk has completely curdled. A lump of this cheese, still damp, is crushed in the hands, previously washed, and made into slabs about 15 by 5 centimeters. These slabs are arranged for drying on a bed of afazzou stalks. Tikamarin is eaten dry; it is kept over a year, and it is said to be still edible after four years.

/106/ "Ioulsan" ("qlila" in Arabic) is a cheese made from the sour milk left over from kaing butter. This sour milk is poured into a pot and is heated for a long time. The contents of the pot are then poured in a special filter, a kind of afazzou basket; the water drains off and the remaining cheese is then fashioned into small circular cakes, six centimeters in diameter and two centimeters thick. Ioulsan is quickly eaten, but it can be kept dry and is used, above all, in making the argira which is eaten in the summer.

262 The Tuareg like meat very much, but they eat it relatively infrequently; yet some Tuareg say that one should not let ten days go by without eating meat.

The most used meat is goat; mutton is eaten less often, and camel in exceptional circumstances. The meat of

● 262 /106 cont./gazelles and wild sheep is much esteemed, particularly since it costs nothing, but having it depends on chance. The hare is eaten only by children or Negroes. Birds, wild or domesticated, are not much liked.

252 Meat is eaten boiled or grilled, always well done. The Tuareg mechoui /roasted sheep/ is called "abatoul" (hole). A hole is dug in rather coarse-grained sand, and a large fire is built in it. The embers are then removed from the hole, and the dismembered animal, well cut open, is placed in it, without butter or spices. The meat is then covered with sand, and a fire is maintained over it for two or three hours. The meat is then pulled out, is strongly hit with a stick to knock off the grains of sand, and is ready for sampling.

262 251 Practically speaking, the Tuareg never eat green vegetables; they keep dried onions (tarafaret), which give some taste to their dishes; dried tomatoes, abundantly produced in the Ahaggar, are also used.

Wheat, rather seldom used, makes it possible to make couscous and flat cakes called "taguella." The Tuareg also make taguella with millet flour, but these are truly awful.

262 /107/ It is well to note the scruples of the Tuareg so far as Islamic food taboos are concerned.

They continue, in fact, to eat their traditional food, and it happens that their custom fits in with Moslem regulations.

To amuse themselves, children eat "tilout" and those large lizards called "dobs," which they grill on glowing embers. They open the stomach and eat little pinches of the flesh cooked in the skin, somewhat as one would eat a soft-boiled egg.

Chicken eggs are not much liked; children accept them, but they prefer dob eggs.

The daman, called akaokao, a wild little rodent of the granite hills, is eaten only by the Negroes.

European food has not penetrated the tent, so to speak; only patés are liked, but the Tuareg do not yet go so far as to

262 /107 cont./ buy them. Rice is considered to be a remedy. In the way of preserved foods, one may see the Tuareg eat sardines in oil and jam and use canned milk. All of these foods are not accepted with enthusiasm; they are too expensive, [181] and the Tuareg seem to be truly conservative in food matters, as well as in the whole of their customs.

They drink water, milk, and tea, the latter being of 272 relatively recent importation but in the way of becoming a necessity. There is no need to mention again the ritual that surrounds the making and drinking of tea.

Coffee is scarcely drunk except with the French; when it [273] is taken in the tent, it is as a remedy. Need I say that the Tuareg drink no alcohol and that at the present time there is no exception ot this rule?

Public Health

161 It appears to be practically impossible to construct a demographic table for the Ahaggar: figures for the years /108/ before 1947 are rare and suspect; they give an acceptable approximation but do not give an exact picture of population movements.

In this field one must then use figures from recent censuses and observations of the tribes that may be easily visited in trying prudently to project these observations to the whole of the population.

In 1948 the count was:	6, 048	nomads
	4, 240	harratin
	10, 288	
1949	6, 013	nomads
	4, 285	harratin
	10, 298	

The population figure for the Ahaggar seems to be fairly stationary (even if one does not rely exclusively on the figures

787 /117 cont./ She goes to a "debni," a pre-Islamic tomb, lies down on the stones, and says the following words: "Imeguedda enkerguedda," the meaning of which is not known. Putting her ear to the stones, she may hear the news, certainly transmitted by the Kel es Souf. The debni speaks briefly, three times only, and it is not permitted to ask it questions.

The other process requires the sacrifice of a goat. The grass in its stomach is taken out and is made into one or several balls. When night falls the woman goes to a flat place away from all human presence; she throws the balls as far as possible, then lies on the ground and puts her ear against it. If the Kel es Souf are favorably disposed, the news arrives as briefly, but as precisely, as in the preceding method. This process is called "tizomitin." Methods exist to question Fate. They are called "idjehan" and consist of making dots on the sand whose exact number one does not know. The technique differs according to the manner of making the dots. It is something like the card game of patience, for the responses are either "yes" or "no." Some Tuareg know another method to obtain more varied answers, but the apprenticeship for this is long.

241 There are other superstitions, such as that which calls for putting old cooking pots, or else the jaw of an ass, on view in a wheat field in order to have a good harvest. Let us also
● 262 mention the Negresses' custom of eating cat's thighs in the month of March in order to gain weight.

All of these beliefs should be collected, but that would require long, patient work, which could not be carried out except in a climate of confidence.

771 /118/ One may say that the Ahaggar still lives in a world of magic despite the presence of Islam. This fear of spirits, which seems childish to an Occidental, is very real. "Imagination," Fraser says, "knows how to act on man with as much effect as does gravity, and may kill him with the same certitude as would a dose of prussic acid." The

*233 171

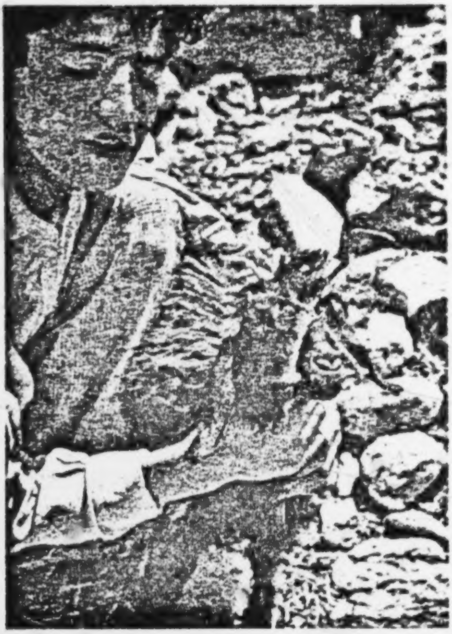


Fig. 19. Photograph illustrating how the stick (*akara, aseḍres*) is attached to the head of a kid. This photograph shows the semi-nomadic Berber-speaking *Chawiya* of Aurès.

234 [262] squatting, she puts the left hind leg of the goat between her right thigh and calf. Goat-milk is drunk, added to food, or made into butter and cheese as described in detail p. 221 ff. Both in Ayr and in Ahaggar it is claimed that goats under favourable conditions yield about two litres of milk a day. But this is to be considered the maximum yield obtained only from goats with young kids when fresh-green annual pasture is available.

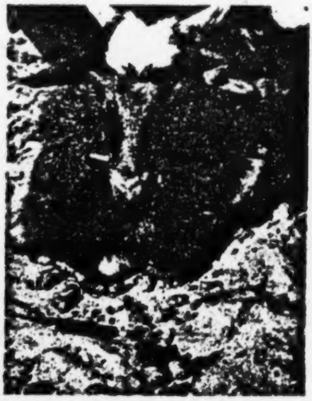
*233 [262] Meat is not a staple food among the Tuareg. Most of them are reluctant to kill their animals except at certain feasts. But most meat eaten by the Tuareg is goat's meat. In Ayr I was told that some pastoralists keep their goats as well as other domestic animals as long as possible, that is until the animals die a natural death. However, the Tuareg are generally not so irrational. They say that goats may live for about twenty years, and that they are capable of bringing forth kids and yield milk until 15 years old. When goats have reached that age they are sold or killed, but many Tuareg prefer for obvious reasons to keep their milk-goats only to an age of eight or ten years. There is a limit to the number of goats that can be bred by the members of a small camp, because it is not possible to have more than a certain number of goats in one and the same flock, and there will not always be sufficient labour to tend several flocks. Therefore it is evidently preferable to substitute old milk-goats with

younger animals which yield more milk. Again, the meat of very old goats is of inferior quality. Much 233*
goat-meat derives from he-goats of which a very limited number is needed for mating. Some Tuareg 262
claim that one he-goat is able to cover about a hundred goats, but as a rule I doubt whether it would be called upon to do so. In any event, too many he-goats are brought forth, and even very young male kids are frequently killed and eaten as there will be more milk for the nomads when such animals do not have to be suckled. It is considered ideal that male kids which are not needed for reproduction, and which are not killed at very early age, should be castrated at the time when weaning takes place, but even old he-goats may be castrated to make them fat for slaughtering.

Though meat is not a stable dish of the Tuareg they have to kill a certain number of goats every 237
year to obtain skin for the manufacture of various domestic utensils. The roaming life in the desert 415
necessitates a great many containers for water, butter, milk, grain, dates, and the like, and bags made from goat-skin are appropriate for this purpose. Indeed, goat-skin is so important to Tuareg craft that in speaking of the manufacture of most domestic articles one can hardly avoid mentioning the word "goat". Thus, my fairly large collection of ethnographic specimens from the Ahaggar Tuareg 126
contains about fifty different objects made entirely or mainly of goat-skin, which is also used for the 342
manufacture of tents among the Northern Tuareg. Even nowadays, a few articles of dress are made 291
from goat-skin, and goat-skin was in general use for this purpose in the past (cf. p. 287 ff.).

Goat-hair is extremely useful to the Northern Tuareg. The hair is cut once a year in the hot season when the animals do not suffer from cold (cf. Fig. 98). It is spun into strong cords used for tethering 283
animals, for tying up caravan loads, for reins, and the like. In certain tribes of Ahaggar it is also used 286
for a very primitive kind of weaving (cf. p. 265 ff., Figs. 209a–b).

To understand the economic role of goat-breeding one must briefly touch on the question of size 233*
of flocks. Statistics concerning the ownership of livestock must always be regarded with much suspicion, 128
as it is extremely difficult to obtain data. It is not only most impolite to ask Tuareg about the size of



233*

Fig. 20. A kid with the stick (*akara, asedres*) pierced through the mouth as described in the text. Tasilé-n-Ajjer, the *Kel Terurit* tribe.

to be considered rich in goats (and sheep) should own about 300 animals. They also say that in the 233* past the Tuareg of their group owned more goats (and sheep) than nowadays. A household at that time might even possess up to a thousand animals, but it would not have many camels and very few zebus, or none. In Southern Ayr, according to the Tuareg, there has been no severe period of drought [132] within the memory of man, and goat-breeding is consequently a much more stable industry than in the desert proper.

SHEEP

Sheep are very important domestic animals to most North African pastoralists. In the Atlas and on [171] the outskirts of the Northern Sahara sheep belong to various woolly breeds. Woolly sheep are also known in isolated parts of the Western Sudan around Macina south-west of Timbuktu (Doutressoulle 1947, p. 191 ff.). I have myself seen many woolly sheep along the Niger between Niamey and Ayoru – among the Zerma-Sonṛay and other semi-sedentary peoples – but I have not seen them in the camps of pastoral Tuareg and *Bélla*. These sheep belong to the so-called "Goundoum" breed (Zerma) and according to Doutressoulle they constitute a degenerate type of the Macina breed (cf. Doutressoulle 1947, p. 195). It is recorded by Aymard that there are some woolly sheep among the south-western Tuareg (Aymard 1911, p. 118). However, Tuareg sheep in all other groups belong exclusively to the hairy breed which is known as *Ovis longipes*.

It is admitted by zoologists that *Ovis longipes* characterized by a short cover of hair, high stature, and a long thin tail, is the oldest known type of domesticated sheep (cf. Adametz 1920, p. 59 ff.; Antonius 1922, p. 213 ff.; Hilzheimer 1936, p. 199; Doutressoulle 1947, p. 196). In North-western Africa this hairy sheep falls into two types:— (1) The rams have large circular or snailshell-formed horns. This is the breed known to all Northern Tuareg, the Ayr Tuareg, and the *Kel Geres*, and apparently also to other Southern Tuareg. (2) The rams have very long horns of corkscrew form which protrude horizontally. This type is found among some Southern Tuareg, and it is occasionally seen in Tuareg camps immediately south of the Ayr Massif. The Ayr Tuareg say that this breed is typical of the Fulani, and this is in agreement with Doutressoulle's statement (Doutressoulle 1947, p. 200). This latter type of *Ovis longipes* sheep is also known among Nilotic peoples of the Anglo-Egyptian Sudan, and it seems to have been known in Ancient Egypt. It is perhaps the oldest type of *Ovis longipes* sheep (cf. Adametz 1920, p. 59 ff.).

In Ahaggar and Tasilé-n-Ajjer sheep are of relatively little importance to pastoral Tuareg. I believe that very few Tuareg of these regions have more than one sheep to ten goats. The reason for this lies in climatic conditions, for effective sheep-breeding is not possible where pastures do not regenerate regularly, as sheep cannot feed properly on the thorny acacias as can goats. Conditions of sheep-breeding are much more favourable in Ayr than in the north, and certain pastoral Tuareg of Southern Ayr have more sheep than goats, though sheep in Ayr suffer from lack of fodder in the dry hot season when they are extremely thin and meagre. With good grazing sheep yield more milk than goats, but [262] otherwise goats are better milch animals. The meat of sheep is considered superior to goat meat, and

p. 93 ff.), and this seems to be true partly also of the so-called Watusi-cattle and related breeds, which 233* have been mixed with zebu-cattle and therefore frequently have well developed humps (cf. Adametz 171 1920, p. 10 ff.; Faulkner & Epstein 1957, p. 148 ff.; Johsi, McLaughlin & Phillips 1957, p. 146, 178, 259).

Adametz believes that zebus were introduced into Africa from Northern India about 2000 B.C. 233* (Adametz 1920, p. 10 ff.). Nowadays Zebus no doubt form the most important types of cattle in 174 Africa, and Tuareg cattle are of the zebu type. The West African zebus fall into a number of subbreeds described in detail by Doutressoulle. The zebu type found in Ayr and adjacent regions and also introduced into Northern Tuareg country is known as the *Azawaɣ* breed (Doutressoulle 1947, p. 102 ff.). In Southern Ayr, which nowadays has a fairly large population of pastoral Fulani, a particular type of zebu is also very common. This zebu is characterized by very high stature and extremely long horns often resembling the form of a lyre (Fig. 27). This breed is named Borodji, Bororo, or M'Bororo. The Fulani zebu is esteemed by certain Ayr Tuareg because of its fatter milk, but it is 262 claimed that its meat is not so delicious as that of their own cattle.

Pastoral Tuareg of Ahaggar and Tasilé-n-Ajjer do not breed cattle (zebus), which do not thrive in their barren countries where pastures of annual plants do not regenerate annually. An attempt to breed zebus among the pastoral Ahaggar Tuareg some years ago failed, and zebus are nowadays found only among settled agriculturists who use these animals as draught-animals at irrigation wells (p. 189; Fig. 132 a–b). A few agriculturists also have cows to raise calves, and to utilize their milk. It is comparatively easy for settled agriculturists of Ahaggar to keep cattle. In dry years, and when pasture is scarce and dry in the hot season, cattle can be fed on vegetables and the straw of certain plants grown in the garden. It can also be mentioned that many agriculturists live in the very broad river 361 valleys of lower Ahaggar where water is not very deep under the sand, and at some agricultural settlements there are even permanent springs. In such places (e.g., the settlements of Abalessa and 137 Amsel) there are even in dry years fresh grazing of a few permanent plants suited to cattle, notably the four following species:— *tahlé* (*Typha elephantina*), *tésengelt* (*Saccharum Ravennae*), *ilegga* (sing. *aleggi*) (*Scirpus Holoschoenus*), and *taysest* (*Eragrostis bipinnata*). The regeneration of these plants is not dependent upon annual rainfall, for the soil is always sufficiently humid for their annual regeneration. Therefore it is very common in Ahaggar (e.g., at Abalessa and at Amsel) to burn down the old 224 dry plants late in winter so that new fresh plants can germinate in spring. This method of renewing pasture by the burning down of old dry plants is not generally possible in desert countries. In Ahaggar it is practised only for the four above mentioned species within very limited humid areas, and the method is said to be entirely unknown in Ayr.

The Ahaggar agriculturists who possess oxen very frequently use these animals for riding, sitting 492 on the hind part of the animals which are kept under control by means of a rein (*taẓerkit*) placed through their nostrils, or by means of a halter. No saddle is used apart from a casual piece of cotton, or a blanket (Fig. 28). In Tasilé-n-Ajjer, it is said, the settled farmers have no cows but only bulls and oxen to be used at irrigation wells, and these animals are not used for riding as in Ahaggar.

The zebus found in the settlements of northern agriculturists are all introduced from the south where conditions for ox-breeding are much more favourable. Many, and perhaps most, northern zebus have come from Ayr from which region they are still introduced to Ahaggar and Tasilé-n-Ajjer.

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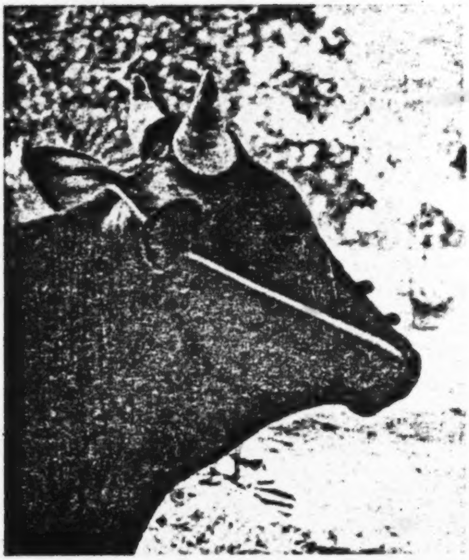

Fig. 30. Young zebu ox with *ikembar*, that is cuts made with a knife on the bridge of the animal's nose, and with a cord (*asabar*) placed through the nostrils. Ayr, sedentary *Kel Ewey* Tuareg near Agadez.

(2) *tabellut*, that is a small pronged stick about 40 centimetres long placed through the nostrils of the calf which is thus prevented from reaching its mother's udder (Fig. 31). (3) *ikemban*, that is two small pointed sticks crossing each other and attached over the calf's nosebridge. When the calf tries to suck it hurts the udder of the mother cow which will kick the calf away. I have only seen this device once in Southern Ayr, and I am not quite sure that the term mentioned is correctly spelled, as I did not take it down in *tifinaṛ*. (4) *akimbab*, that is a muzzle. It is not in general use among the Ayr Tuareg though they know of it. It is in current use among the Tuareg of the plains west of the Massif (Tamesna) where I have seen it among the *Iregenaten* Tuareg, who politically belong to the *Kel Ṛela* drum-group of Ahaggar (Fig. 32). I have seen the same device also known as *akimbab* among the *Kel Tahabanat* of the *Western Iwllemmeden*. Similar muzzles are used among the *Iwllemmeden* around Meneka (Musée de l'homme, nos. 36.44.50 & 41.19. 1111–1114) and also among the Tuareg of Adṛaṛ-n-Foṛas (Musée de Neuchâtel, no. 49.2.39). – These are the weaning devices used in Ayr, the method most commonly applied being that known as *tabellut*, the small pronged stick passed through the calf's nostrils.

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Cow's milk is drunk fresh, added to food, or made into butter and cheese according to methods described in a later chapter. The Tuareg say that an extremely good milch-cow yields up to seven litres of milk a day. This agrees with Doutressoulle's statement that cows of the *Azawaṛ* breed yield six to eight litres daily at the beginning of their lactation period, while at the end of this period the daily

bridge of the nose of a calf, so that it hurts its mother when it tries to suck (Cauvet 1925, I, p. 359). – 233*
(3) *akimbab*, that is a plaited muzzle which allows the calf to graze, but prevents it from sucking. I
have been told both in Ahaggar and Ayr that such muzzles are used for camel calves, but apparently
they do not constitute a normal weaning method. – (4) *asedres* or *ameru* are said to be synonymous
terms for the weaning method generally adopted among the *Kel Ferwan* Tuareg of Ayr. The method
is as follows:— The upper lip of the calf is pierced on both sides of the harelip so characteristic of all
camels. A piece of thin root of the *afagag* acacia (*Acacia Raddiana*) is drawn through these holes so 824
that the ends of the root protude at both sides, and a knot is made at both ends that the root will
not fall out. These knots hurt the udder of a she-camel when the calf starts to suck, but this is not
the real idea of the device. For the root-piece keeps the pierced holes open and the calf is therefore
unable to suck at all.

A she-camel may yield about ten litres of milk at the beginning of its lactation period, but at the 234
end of this period it does not yield more than two or three litres even with good grazing. The yield is
always dependent on grazing conditions. Thus during my stay in Ahnet and Ahaggar 1954–55, a
Tuareg who owned about twenty she-camels acquired only two litres of milk a day in all from these
animals. But conditions of camel-breeding are much better in Ayr and in the southern plains where 433
she-camels are tolerably good milk-yielders most of the year, and camel's milk is therefore very important
to some pastoralists of these regions. Camel's milk is drunk and not generally used for food 272
in other ways. It is much esteemed by all Tuareg, who claim that it possesses a particular power and
gives strength. It is never stored in the shape of butter or cheese. The Tuareg of Ahaggar and Ayr 262
never eat camel's butter which they consider possesses a poor taste, and, besides, it is very difficult
to churn. They make butter of camel's milk only when butter of milk from other domestic animals is 302
lacking for the greasing of the hair. Both in Ahaggar and in Ayr butter is then churned by the men
in a rather peculiar way:— A skin bag containing an amount of camel's milk is attached to the riding 415
saddle of a camel which is then ridden at very fast speed for some time. But even with this method,
it is said, camel's milk gives very little butter, and it is also definitely stated that the milk cannot be
used for cheese-making. These Tuareg statements seem to be confirmed by analyses of veterinaries, 114
who claim camel's milk to contain very little casein, and it has been proved difficult to separate
butter from camel's milk (cf. Cauvet 1925, I, p. 707 ff.).

She-camels can mate and yield milk until an age of about 25, and their average length of life is 233*
estimated by the Tuareg at about 30 years. But pastoral Tuareg do not generally keep their camels
until they die a natural death. In Ayr I was told that she-camels more than twenty years old should
be sold or killed. Most Tuareg sell their old camels in the oases of the Central or Northern Sahara 432
where a large population of sedentary farmers is constantly yearning for meat. Very few camels are 366
killed by the butchers of Agadez, where meat from oxen, sheep, and goats is always available and 262
fairly cheap, but a great many old camels are slaughtered at the market places of the oases further north.

Pastoral Tuareg of Ayr very rarely kill their own camels to eat them. They will slaughter a camel 262
which suffers from some severe disease as all animals dying by accident or from disease are unlawful
to eat. However, there are also some Ayr Tuareg who will never eat camel's meat. They say that they 261
would feel very sick at heart were they to do so, and some Tuareg even say that they would vomit

to the killing of a camel for wedding guests. Otherwise the Northern Tuareg like those of Ayr only 262
kill sick animals for food.

There are certain practical reasons why camels should not normally be killed for food among the
Tuareg. Even very old camels fetch high prices at markets of the northern oases (Tamanṛaset, Tidikelt), [435]
and the Tuareg prefer to get the money instead of eating their old camels. This is easily understood
when we consider the fact that one camel contains so much meat that it cannot be eaten quickly by [252]
the members of a household, and camel's meat is rather tough and must be boiled for several hours
to be eatable. Besides, camel's meat is not very well suited to be preserved for eating at a later date [251]
on journeys. However, it can be dried and when sick camels are killed part of their meat is often prepared in this way.

A camel is killed in a very particular way quite different from the method of slaughtering other 233*
domestic animals and game. It is killed as follows:— Cords are attached very firmly around the legs of the animal which is kept to the ground by several men who sit on its back and draw its head backwards. The artery is thereupon opened at the lower part of the neck close to the chest, and the knife is thrust into the animal at this place, but not so deeply as to touch the heart or the entrails. This stab is quite sufficient to kill the camel, but some people also cut its throat close to the head in the way other domestic animals are killed. Very peculiar also is the way camels are skinned. While other animals are skinned in such a way that the hide can be removed as entire as possible (cf. Fig. 173), the carcass of a camel is cut up before skinning. The four legs with their thighs are cut loose close to the carcass, which is thereupon cut into several parts by means of a large chopping-knife or an axe (cf. Fig. 44). The hide is thus removed from the carcass after partitioning; but it is difficult to remove the hide as
it sticks firmly to the meat, and only part of it is taken off for later use. In Ayr the Tuareg do not 000

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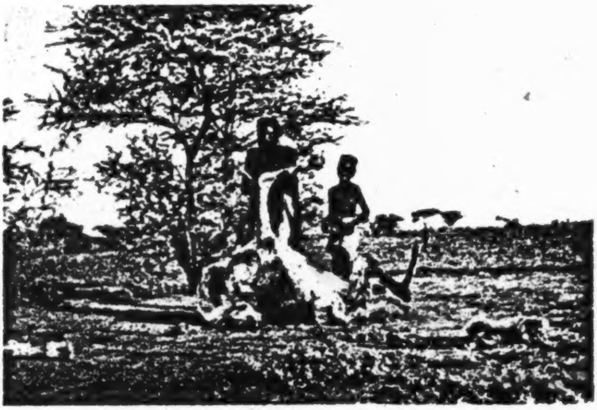

Fig. 44. Skinning and partitioning of a young camel. Ayr, *Irawélen*.

[text continues on p. 67]

Fig. 82b. Cf. text Fig. 82a.

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qualities as strength and speed, but rather on elegance and sublimity. The riders sit straight in the 526
saddles without watching the crowd of women, and the camels are ridden at a gentle trot (generally 492*
that known as *senat-senat*; cf. p. 99) with their heads drawn back. In this way the men may also ride 585
their animals round the women in a circle as I have seen in Ayr (cf. Fig. 82).

Camels have important social functions among the Tuareg who take an interest in these animals 233
far beyond their practical value. It may perhaps be useful to compare Tuareg interest in camels with 181
Nuer interest in cattle so brilliantly described by Evans-Pritchard. Nuer caress their animals, and [171]
there is a tendency for human beings and cattle to form, so to speak, a single community (Evans-Pritchard 1940, p. 16–50). This is not exactly true of Tuareg and camels. The Tuareg do not pat their camels which will not respond to caressing, and they do not live in very close contact with their animals, most of which frequently graze far away from the camp under the supervision of one or two herdsmen. But the Tuareg nevertheless have much the same feeling towards camels as Nuer have towards
their cattle. They are very fond of their animals. They may abstain from camel's flesh because they [262] ●
are fond of camels and would feel very sick at heart when eating them. But though the Tuareg are fond of camels as such, they are delighted particularly at the sight of a very fine camel (*akemhur*;
Ahaggar) and may even speak disparagingly of a badly built animal (*amugey*; Ahaggar). Fine camels [554]
add to the prestige of a man, while too many animals of poor build may even harm his reputation.
When girls and young women praise camel-riders in their songs they praise those mounted on fine [533]
and richly-decorated animals. When camels are mentioned in poetry this may also be done as praise [538]
to their owners, as in a poem composed in honour of noble Tuareg of the *Uraṛen* (*Kel Ajjer*) of whom it is said that "their pack-camels have feet as large as a drum, and the loads they carry are like the
crests of mountains" (Hanoteau 1896, p. 218). Such reference to pack-camels, however, seems to be [492]*
rare in Tuareg poetry, while riding camels are frequently mentioned in connection with warfare and [171]
love. Riding camels have much the same esteemed position as had horses in Medieval Europe. Tuareg
interest in camels is particularly focused on riding camels and there is a tendency towards identification 492*
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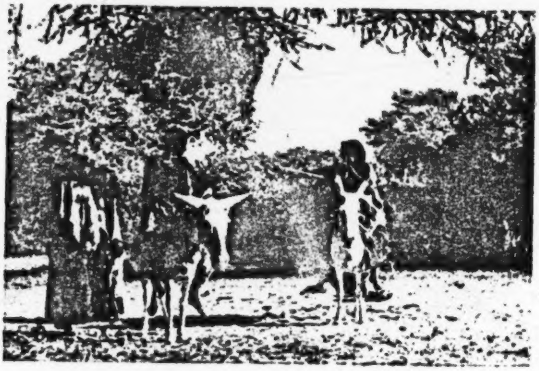

Fig. 84. Boy and woman mounted on donkeys. Ayr, the *Imezzureg* tribe.

But the wild animals are bigger, which the Tuareg ascribe to the fact that they roam freely in the desert 231
and always can find the very best fodder – an explanation which seems reasonable as the Tuareg 136
camp where fodder is reserved to their milk-yielding animals (cf. p. 491 ff.). It can be added that 231
domestic donkeys are frequently tightly hobbled by means of a narrow rope (*téffart*) around their forelegs (Fig. 45) and sometimes also with another rope (*amahus* in Ahaggar) running from one foreleg to a hind leg.

If donkeys are not hobbled, there is always a great risk that they will disappear in the mountains and join the herds of wild animals. Unhobbled donkeys are often caught with great difficulty. They are sometimes driven together by the inhabitants of a camp, and when mares have foals it may even become necessary to run down the foals on riding camels in order to get hold of their mothers. In [312]
some regions where donkeys depend on water from deep wells it is customary not to give them too much water to drink, in which case unhobbled animals can always be caught at the well, where they will wait for water. But donkeys are very well fitted for desert life. They can do without water for several days even when weather is extremely hot, and where water is very near the surface so that the sandy soil is humid donkeys dig small holes with their hoofs to drink the water which quickly gathers in these depressions. I have myself witnessed this in Ahaggar where the Tuareg say that among domestic animals only donkeys are able to make such water-holes.

The Tuareg distinguish between the domestic donkey (*éyhed* in the north, *éyjed* among the Ayr Tuareg) and the wild donkey or ass (*ahulil* in the north, *émedrer* in Ayr), but they are well aware that there is no important distinction between them for many Tuareg even nowadays obtain domestic donkeys by catching wild animals. Wild donkeys or asses were hunted for domestication still more eagerly in the past, and there may perhaps be some connection between donkey-breeding and true
hunting – that is hunting for meat. Nowadays the Tuareg never eat donkey's meat, nor do they utilize 231
the skin of these animals. But it is known that the Ahaggar Tuareg have eaten donkey's meat in periods 262
of hunger even fairly recently, and Duveyrier states that old animals caught in traps are killed for their 237

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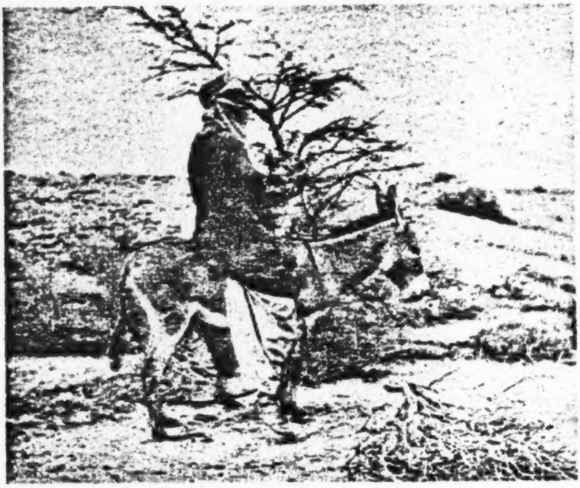

Fig. 85. Tuareg breaking in a young newly-caught donkey. The donkey is prevented from escaping by means of hobble-ropes (*téffart* and *amahus*) and is also tethered to an acacia tree. Ahaggar, the *Aġuh-en-tehlé* tribe.

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262 skin (Duveyrier 1864, p. 231). It is most possible that the taboo on donkey's meat and skin is due to
237 Islam – meat of donkeys and horses is considered unlawful by the Ḳoran. Leo Africanus states that
[175] the nomads of the Sahara eat meat of donkeys which they catch in snares (Leo Africanus II, p. 944).

136 The wild donkeys, or asses, of Tuareg countries are very shy, and it is most impressive to watch a
224 herd of some twenty animals galloping over the desert plains. Because of their shyness they are often
hunted much in the same way as game animals. Among the Northern Tuareg they are caught in the
spiked wheel-trap, are run down by men mounted on camels, or are driven into closed river valleys
surrounded by steep rocky walls. In certain parts of Ayr wild donkeys can be caught in the same
way – notably in valleys of Mount Tamgak (Northern Ayr) and around Anu Meḳḳeren (Central Ayr) –
while the method of running down wild donkeys with riding camels is said not to be practised. Whether
the so-called spiked wheel-trap is used for catching donkeys or not, I do not know, as the Ayr country
is very extensive and inhabited by Tuareg of different origins. The Tuareg belonging to the *Kel Ferwan*
group claimed that it was not used for donkeys or asses for which they have a kind of snare called
tuṛunt, which is also the name used among them for the noosed rope connected with the spiked wheel-
[283] trap. The snare used for donkeys is said to consist of a rope some twenty or thirty metres long and
plaited from dum palm leaves. The rope is noosed at one end to be used as follows:— The loop is
laid out where donkeys come to drink, the whole rope being covered with sand. The hunter lies
hidden behind some natural object, a rock or tree, and when a donkey puts one of its legs within the
[231] loop he pulls the rope. It is said that this method is also sometimes used for other domestic animals
which have gone wild, as happens frequently with oxen. But it is never used for hunting proper game
231 animals such as gazelle, antelope, and barbary sheep. To catch domestic animals which have gone
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*492 household goods during nomadic migrations, and are employed daily in all camps to carry water in skin- 415 bags from wells and waterholes to the tents. They are very strong animals considering their low stature, 312 and good pack-donkeys can carry up to one hundred kilograms even for very long trips. Donkeys 262 are occasionally used for long journeys by the Northern Tuareg, and many Ayr Tuareg use them to fetch provisions of millet around Tanut in Damergu. Caravans of donkeys are frequently observed 484 in these regions, and one even sees mixed caravans of donkeys and camels. There can be no doubt 174 that before the introduction of the camel the donkey was still more important for riding and transportation than is the case nowadays. This is clearly demonstrated by historical material from Egypt and adjacent regions (cf. Erman 1922, p. 518 f., 529, 592 f., 636).

231 It has already been mentioned that donkey's meat and skin are not utilized nowadays by the Tuareg. 262 The same is true of mare's milk which, however, is used as a remedy against a kind of cough known 257 to the Ayr Tuareg as *khamkham*. There is no regulation of mating for donkeys which in many ways are semi-domesticated animals. In Ayr male donkeys are never castrated, while the Ahaggar Tuareg say they castrate such stallions as constantly run after the mares and in this way cause too much trouble. The Tuareg also have no methods to prevent foals from sucking, while a method of this kind is sometimes applied by sedentary people in and around Agadez. This method known as *éfinjar* consists in the cutting of the nostrils of half-grown foals so that they cannot suck pregnant mares. Both stallions *492 and mares are used for riding and transportation, but female animals are much preferred for these purposes. Mares are used almost exclusively for the transportation of water-bags hanging under the animals, as the bags might be squirted by stallions' urine.

The Northern Tuareg saddle their donkeys, using the same saddle type for riding and for transpor- 462 tation (Fig. 86). This is known as *aruku* and is manufactured by the women in the following way:— 824 Two fresh boughs of the *tahunek*-tree (*Rhus oxyacantha*) are heated, or slightly burned, over the fire. 322 The boughs are thereupon barked and bent into the curved form wanted, and are then kept in this position by cords. After drying for a few days the boughs will retain their curved form, and the cords are untied. The boughs are then cut up and their ends are connected by two pieces of camel's hide 237 soaked in water, and sewn together by means of a large iron needle (*tasugla*, or *tasubla*) (cf. Fig. 220b) 412 and a thread which is also cut from camel's hide. The wooden saddle frame is attached to three 237 cushions. These cushions are generally made of goat-skin or sheep-skin stuffed with hay or with date palm bast, but may also be plaited from leaves of the date palm tree. Cushions made from goat-skin 412 are sewn together with strips of the same material by means of the little awl known as *tistent* (cf. Fig. 218a). The two long cushions resting lengthwise upon the animals back are known as *tastek*, and the small cushion resting over the animal's back close to its shoulders is called *tafelledut*. The saddle is fixed to the donkey by two girths consisting of cords made of goat-hair. One of these cords (*tidmechart*) passes under the tail, the other (*ahayif*) is tied around the chest of the animal. This saddle type is well fitted for the transportation of burdens and in particular of water-bags, the cords of which are attached to the pommels. When the saddle is used for riding it is frequently covered with a blanket or a piece of cloth. Saddles of this type are found in all camps of the Northern Tuareg, and Lhote states that they are also found in Adṛaṛ-n-Foṛas and in Ayr (Lhote 1947a, p. 120). This may be so, but I have myself never seen them in the latter region where they are unknown to the *Kel Ferwan*

DOMESTIC BIRDS

235 Many sedentary people within Tuareg countries breed fowls of which a few may also be found in
pastoral camps of the Ayr Tuareg, though fowls seem to be of very little use to them. For the hens
kept by pastoralists do not hatch out their eggs, and these are not always found by the Tuareg. I think
that most pastoralists of Ayr keep fowls mainly because they like to have them walking around the
camp, and I believe that their owners in general are children. Domestic guinea fowls are bred by some
sedentary people of Agadez, and young Tuareg who find a guinea fowl chicken in the bush may even
[262] take it to the camp to keep it as a pet. In Ahaggar there are no fowls among pastoralists, many of
whom will refuse to eat fowls and their eggs (cf. p. 162).

Domestic pigeons are bred by some sedentary people living within Tuareg countries. I believe that
[174] they have been introduced by the Arabs – in accordance with the theory advanced by Stuhlmann and
Lagercrantz (cf. Lagercrantz 1950, p. 74).

The most dangerous African cattle disease is the rinderpest. It is known to have entered Egypt in T 231 the year 1884 from the regions around the Black Sea, and about 1890, or somewhat later, it came to 171 Eastern Africa and to the Sudan. Rinderpest is nowadays widely found in Africa but it is rare or unknown in Northern Tuareg countries. Rinderpest is apparently very rare in the Ayr Massif and it T occurs mainly south of the Massif in savannah country. The Tuareg have no remedy against this 232 disease. It is stated by St. Croix that the Fulani of Northern Nigeria once deliberately exposed their F 232 cattle to mild rinderpest to make them immune from this disease in its more severe and dangerous form. However, this method did not work and the Fulani gave up further experiments of this kind. It is also mentioned by St. Croix that the Fulani practise a kind of vaccination against cattle pleuro-pneumonia and that this is done as follows:— A piece of infected lung is put into milk for two to three days and thereupon placed into a small opening cut under the nose-skin of the animal. The method T is claimed to be effective (St. Croix 1944, p. 24 f.). Vaccination methods are also known to some of 232 the Southern Tuareg, e.g. the *Iwllemmeden*. These people vaccinate human beings against small-pox [751] by inserting the pus of this disease into wounds cut with a knife (Aymard 1911, p. 108), and they also vaccinate their cattle against cattle pleuro-pneumonia ("peripneumonie bovine"). They do this in much the same way as described above for the Fulani:— An infected piece of lung is placed in sour milk or in the soil for a few days, and is thereupon inserted under the skin of the forehead. Nicolas describes the method as dangerous because the infection attacks the whole forehead and also the nose-bone (Nicolas 1950a, p. 133), but two veterinary surgeons who practised among the *Iwllemmeden* of Tawa told me that they considered this kind of vaccination effective. The method is unknown among the Ayr Tuareg of the Massif where this contagious lung-disease is unknown or very rare.

I have no great knowledge of the contagious diseases in the Tuareg groups I have studied, but such T 231 diseases seem to occur comparatively rarely, and there is no veterinary surgeon attached to the French 148 administration of Northern Tuareg countries. There is one veterinary surgeon in Agadez, but his most important field of work lies outside of the mountain massif to the south.

Among the *Kel Ferwan* Tuareg of Southern Ayr I have been told about two contagious diseases T 231 which, when they occur, may give rise to very heavy losses. One of these diseases is known to the T Tuareg as *chonga*. It attacks only cows, which die very quickly, but if cattle suffering from the disease [262] ● are ritually killed their meat is nevertheless considered edible. One Tuareg told me that some years ago about thirty cattle of his camp died in one day from an attack of *chonga*.

The other contagious disease I have recorded from Southern Ayr is called *sandert*. It attacks sheep T 233* and goats, and I collected the following notes about it:— The blood penetrates the animal's flesh 262 which becomes quite red. If sheep or goats suffer from *sandert* and are ritually killed for eating, very 252 great care must be taken in the preparation of the meat. It must be boiled until it contains no blood, T and must not be eaten until it is cold and dry. It is said that if these precautions are not taken the [753] people who eat meat from animals suffering from *sandert* will themselves become attacked by the T disease, with the result that blood and pus may penetrate the skin at any part of the body. They say 757 that a man who has eaten unboiled meat of an animal suffering from this disease with consequent infection is treated in the following way:— A species of ant more venomous than the normal small

778 Religious beliefs also interfere with Tuareg stock-breeding and create usages of an irrational kind.
[231] Thus the Tuareg, like other North African peoples, firmly believe in the mystic benevolent power,
[171] or benediction, known as *elbaraka*. This is a power that emenates from God. It is given by God to
[784] man and it cannot act unless certain taboos, or rather religious prescriptions, are followed. The bene-
[783] diction *elbaraka* is more than anything else hurt by impurity. Cleanness is an absolute necessity for
this good force to be sustained in the same way that a man cannot approach God through prayer if
[841] he be unclean. Women are considered unclean during their periods of menstruation and cannot, there-
[262] fore, then pray to God. They are also forbidden to drink the milk of domestic animals which have very
young kids, lambs, or calves, and they must not drink water which has been conserved in newly-
made skin-bags. These taboos are maintained in order not to hurt the benediction given the animals
778 by bringing it into contact with impurity. For the same reason milk taken from animals which have
784 recently brought forth young should not be given to strangers – they might be unclean and harm the
234 *elbaraka*. It is also believed that soil is an impurity dangerous to *elbaraka*, and milk must never be
spilt on the ground. Even when milk-bowls are cleaned with water, this liquid should be poured out
upon plants or stones, and never be spilt on the ground. Should this be done, God will withdraw his
elbaraka and the result will be severe periods of drought without milk. I have frequently heard Tuareg
ascribe the lack of rain and the dry pasture – the lack of *elbaraka* – to the fact that somebody had spilt
milk upon the ground. This had caused God to be angry and to withdraw his benediction. Some Tuareg
have also said that *elbaraka* is harmed by a person who blows upon milk. When a man drinks milk
he must not blow away impurities before drinking but must remove them by means of a piece of straw.

*233 In the two groups of Northern Tuareg and also in Ayr it is considered very disgraceful for a person
577 who watches the animals away from camp to drink milk directly from an animal's udder. Some Tuareg
272 say that a man when staying alone among milk-yielding animals should not utilize their milk even if
he performs milking in the usual way. A person who breaks these rules is called *émenkes* or *émelded*
among the Ahaggar Tuareg, *émelded* in Ayr. The Tuareg say that there are some people, and in
particular many slaves, who do not follow this rule, and that they are despised if known to have
broken it. When two or more people are alone with a herd or flock away from the camp they can
freely utilize the animals' milk. And it is very normal for camel herdsmen to live with a herd of she-
camels in isolated places for long periods. They then live almost exclusively on camel's milk taken
from the herd they guard.

272 Certain usages connected with stock-breeding are rationally explained by the Tuareg. Thus when
they heat milk by means of hot stones (cf. p. 221) put into the milking bowl, they claim that this is
done in order that the milk shall not get dirty as would happen were it heated in an ordinary cooking
272 pot. Another custom which by other stock-breeders has been explained as being based upon magic,
262 namely the usage not to drink milk and eat meat at the same time, is also rationally explained by the
Tuareg. They say that there is no taboo on taking these kinds of food together, but it is very unwise
to do so because the mixture will act as a laxative and upset the stomach. Therefore, if a Tuareg has
drunk much milk he will not eat meat shortly afterwards, and if he has eaten meat he will not take
*233 milk for some hours, though he may do so should ample water have been added to the milk. The
234 Tuareg to my knowledge have no other special customs in connection with stock-breeding and milk
than there mentioned

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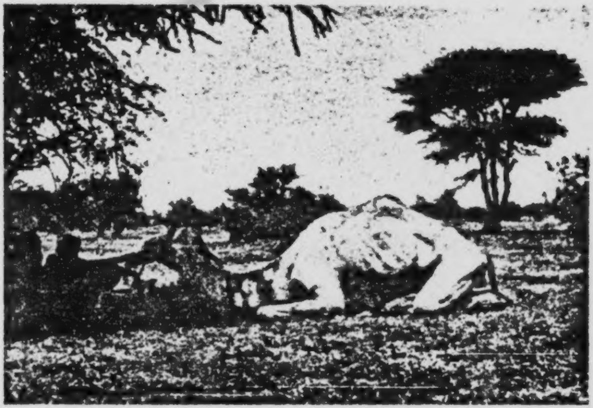

Fig. 95. A Tuareg feeding his riding camel with *afezu* grass (*Panicum turgidum*). Many Tuareg feed their riding animals with stems of this perennial grass – partly to obtain a docile camel for riding, partly to change its fodder which consists largely of acacias and annual plants. The photograph is taken near Agadez at the *akasa* season. Annual plants grow between trees and bushes (*afagag*, *Acacia Raddiana*; *ēbezgin*, *Salvadora persica*; *tadent*, *Boscia senegalensis*). Ayr, the *Isakaranan* tribe.

234 than those mentioned. Thus they can use any kind of receptacle for milk and milking, and they do
415 not clean their milk-bowls with urine as is normal among certain East African stock-breeders, and,
237 perhaps, also among certain of the Fulani living south of Ayr. The taste of urine is detested by the
262 Tuareg, who know this taste all too well as the water drawn from pools and wells is frequently flavoured
237 with urine and the excrement of domestic animals. Nor is camel urine used by Tuareg women for
302 hairdressing as is done among the Arabs, but it is said that it may have a medical value in curing
752 wounds. The custom of drinking blood has been mentioned above (p. 122 f.) and will be described later (p. 235).

*233 The Tuareg apparently have comparatively few superstitious usages in stock-breeding, which is
232 mainly to be considered rational. We have seen that stock-breeding is adapted to environment, and we have also mentioned that there are veterinary methods which doubtless have their origin in considerable knowledge of the anatomy and physiology of domestic animals. This knowledge forms one
*233 corner-stone of rational stock-breeding, and another is the very detailed knowledge of botany. In
824 Ahaggar there are more than 600 different plant species for which the Tuareg have particular names, though a few related species are sometimes known by one and the same name. Every Tuareg know about the ecological conditions of these plants, and he knows exactly their fodder value for domestic animals. He knows that certain plants form excellent fodder for all domestic animals, but he is also well aware that the different types of stock have different needs, so that certain plant species are valuable for camels, other species for other domestic animals.

231 The Tuareg are occasionally cruel to donkeys, and to dogs, but they take the greatest care of all other domestic animals to ensure their wellbeing and reproduction. Women bring acacia pods or
444 tender annual plants to kids, lambs, and calves, and to sick animals which remain in the camp. On
*233 long trading expeditions, when the camels have little time for grazing, some Tuareg will walk along

*233 Each of the three vegetational zones of Ahaggar has its advantages and disadvantages. If we consider
824 a good year when rain has fallen abundantly with a resultant regeneration of all fodder plants, the
137 *Atakor* zone has very excellent pasture. For the plains and the stony mountain slopes are then entirely
132 covered with annual plants which by the Tuareg are considered the very best fodder. The Tuareg also
133 claim that the upper mountain zone is preferable because of its cooler climate, which has a beneficial
influence on the lactation of domestic animals. The disadvantage of the *Atakor* zone is the lack of
acacias to which can be added the scarcity of fuel. The *Tarayin* zone possess characteristics of the *Atakor*
zone and of the *Abada* zone. The *Abada* country is botanically very different from *Atakor*. It has
annual pastures of great value when abundant rainfall has been experimented and it also has valuable
pastures of perennial plants. With heavy rain the *Abada* country is excellent for stock-breeding, and
fuel can be found everywhere. But the Abada country is hotter than are the zones of *Tarayin* and
Atakor.

If rain falls abundantly all over Ahaggar there is good pasture in all three zones. But rainfall is more frequent and heavier at high altitudes than in the *Abada* zone, so that *Atakor* normally has by far the best pasture of annual plants which spring up late in summer or in autumn. The *Abada* zone on the other hand has the very best pasture of perennial plants, notably acacias that grow around the lower parts of the valleys which are always flooded when it rains in the high mountains.

221 The fluctuations of plant development determine the nomadic migrations of the Ahaggar Tuareg.
*233 A few tribes have their normal grazing grounds in *Atakor* (e.g., the *Dag Ṛali* and the *Kel Taẓulet*).
824 They camp in this zone at most seasons to let their goats and sheep feed on fresh and dry annual pasture.
[132] In dry years and during the hot summer season they may move to the *Tarayin* zone where there are
perennial fodder plants, but they rarely camp in the *Abada* country. Many tribes have their normal
grazing grounds in the *Abada* zone (e.g., the *Ağuh-en-tehlé*, the *Ayt Lowayen*, the *Iheyawen Hada*,
[342] and the *Kel Ṛela*), but move to the *Atakor* when annual pasture is good in this region. They live in
Atakor with tents and flocks when annual plants are green, while the rest of the year they camp in
the *Abada* country to let their animals feed on acacias and other perennial species. Finally there are
two tribes (*Tégehé-n-Efis* and *Iklan-en-tawsit*), the members of which camp in the *Abada* country all
the year round even when rich annual pasture is found in *Atakor*. However, members of these tribes
may send their camel herds to the *Atakor* zone, accompanied by herdsmen, while tents and flocks
remain in the lower country.

221 With the exception of a few noble households which keep up their old tradition to subsist largely
*233 on camel's milk, the Ahaggar Tuareg do not keep their she-camels in Ahaggar unless there are excellent
[565] pastures of annual plants in this area. They take their camels to pastures far away from Ahaggar,
[262] notably to the Tamesna region where they have their animals guarded by herdsmen who are frequently
[567] slaves. In very dry years there are very few camels in Ahaggar – just the animals needed for riding
and transportation. It is in fact very easy to take camels to distant pastures, and it is most necessary
to give these animals the utmost care as they are most valuable and their breeding is a very slow process
*233 (cf. p. 56). Goats do not need such excellent fodder as do camels. They can eat almost everything, but
731 in dry years goats may also suffer severely from lack of suitable fodder. This was the case in the year
[361] 1954/55 when I stayed in Ahnet and in Ahaggar. In the small camps of three to four tents each it was

Hunting

For the pastoral Tuareg hunting is not an important occupation, and nowadays it is practised mainly 224
by those few Tuareg who possess rifles or guns. Traditional hunting methods are thus of far less con- [411]
sequence than in the past, but some of them are very interesting and most significant for a historical [121]
analysis of Tuareg culture.

AHAGGAR

Northern Tuareg areas are not very rich in game. In Ahaggar the main types of game are the gazelle 136
(*ahenkod*, fem. *tahenkot*; *Gazella dorcas* sp.) and the barbary sheep (*udad; Ammotragus lervia*). The 224
big gazelle (*énir; Gazella dama permista*) and the addax antelope (*amellul; Addax nasomaculatus*) are
very rare; they are occasionally seen in the plains outside of the mountains. The ostrich (*anhél*;
Struthio camelus) was very common in the past, but is now exterminated.

The small gazelle is rare and shy within the Ahaggar Massif, while fairly abundant and comparatively 224
easy to hunt with a rifle in the northernmost massifs and their surrounding plains. Of seven camps
visited in Ahnet 1954, gazelle hunting was engaged in by the members of two households, and I estimate
that they killed one or two gazelles every week. In most camps of the Northern Tuareg there are no [262]
true gazelle hunters, and when a rare gazelle is killed its meat is easily eaten in one day by the members
of a single household – in addition to three or four pounds of wheat-bread or millet-porridge. Gazelle 237
skin is of little practical value to Tuareg craft. It is not generally used for the manufacture of important [283]
domestic articles such as water bags and containers for milk and butter, but it is suitable and much
esteemed for certain types of decorated leather work and for fine leather cords, e.g., necklaces for
amulet cases, reins for riding camels.

Barbary sheep are extremely shy, and they live mainly in inaccessible mountains. They are still fairly common in certain isolated parts of the mountains, but they were more numerous in the past when hunting was practised without rifles.

The Tuareg estimate that the amount of meat obtained from two gazelles corresponds to the meat
of one grown goat, while a big barbary sheep provides as much meat as that of four goats. Meat of [251]
barbary sheep is better suited for drying than meat of other game animals, and the thick hide of these [237]
animals is valuable for the manufacture of tents and for large bags used for the conservation on [342]
journeys of dates, grain, flour, and the like. The horns of barbary sheep are used as butter containers [415]
(Fig. 165), and some Tuareg add the powder of crushed horns to butter before heating it (cf. p. 222).
Barbary sheep are of greater economic value to the Ahaggar Tuareg than other types of game, and

224 on sandy ground. This same method is also used to catch asses or wild donkeys for domestication (cf. p. 108).

(7) It has been mentioned above (p. 108) that wild donkeys are also caught by driving them into closed valleys from which they cannot escape. As far as I know the Ahaggar Tuareg do not hunt proper game animals in this way, but the driving method is used in fishing as described below (cf. p. 164).

(8) The spiked wheel-trap (*éfetaw*) (Fig. 113) connected with a noosed rope (*tarant*) attached to a piece of wood (*afula*) is used to catch gazelle, barbary sheep, and donkeys. Such traps are easily and quickly manufactured by the Tuareg, and when they want to trap gazelle in this way they make a great many traps which are placed in the sand around young acacias upon which the animals feed. [243] The arrangement of the spiked wheel-trap is brilliantly illustrated in literature (cf. Lhote 1951a, photos p. 112-113; Brouin 1950, p. 454).

(9) A torsion trap (*tendərbat*) provided with a noosed rope is used particularly for barbary sheep. This trap is also depicted in literature (Lhote 1951a, p. 113; Mérite 1942, p. 185). The trap is rare in Ahaggar nowadays. The Ahaggar Tuareg claim that the trap was introduced from Adrar-n-Foras. It is said to be unknown to the Tuareg of Tasilé-n-Ajjer (cf. Fig. 114a).

[564] [177] The Ahaggar Tuareg nowadays engage little in trapping in contrast to the negroid agriculturists (the *Ijarratin*), most of whom have steel traps (*elkheulyet*) manufactured in Europe, or made by native blacksmiths on the European pattern. A few agriculturists have large steel traps to be used for gazelle, barbary sheep, and even for the big gazelle and antelope, but the common steel traps are small and are used mainly for hares (*émerwel*, fem. *témerwelt; abekni*; *Lepus harterti*), jackals (*ébeggi, aggur*; *Thos aureus* sp.), and fennecs (*akhorhi, érechter*; *Fennecus zerda*). Still smaller traps are used for minor [223] rodents (*éḍewi*; *Gerbillus gerbillus?*) (*akundar*; *Masoutiera* sp.) and for certain birds such as ravens (*aralez, taslaft*; *Corvus ruficollis ruficollis*), pigeons (*akekkemaz*; *Columbia livia targia*), turtle-doves (*tédebirt*; *Streptopelia turtur hoggara*), and sand grouse (*tékaḍewt, tédebirt*; *Pterocles* sp.).

Steel traps are now widely used, and traditional trapping methods for small animals and birds are therefore rarely resorted to. Among the *Kel Ajjer* small rodents are caught in snares (*asendi*) made of leather. Snares of this kind are known both to pastoral Tuareg and to sedentary agriculturists of Ġanet and Ṛat. Among the latter there are also two different trap-systems used for small rodents, which in both systems are killed by a flat, heavy stone falling upon them. One of these traps is named *téselseli*. I do not know whether these traps exist in Ahaggar.

223 564 Small birds, including pigeons and turtle-doves, are caught in torsion traps by sedentary agriculturists of the oases. Traps of this kind, which are normally provided with a net (cf. Fig. 114b), are found in most oases of the Northern and Central Sahara, but I have never seen them in use among pastoral Tuareg. Pigeon, turtle-dove, sand grouse, and also partridge (*Alectoris barbara duprezi*) are caught in snares made of hair. Ten or twenty of these snares (*égefey*) are attached to a string so that several birds can be taken at the same time. Bird-snaring is practised mainly by sedentary agriculturists.

262 515 Sedentary agriculturists, slaves, and some vassal Tuareg are not squeamish. Even meat of beasts and birds of prey is eaten by certain vassals, though such animals are unclean and inedible according to Islamic rules. The meat of fennecs, jackals, and a large eagle-like bird known as *tamiddə* is eaten

[text continues on p. 162]

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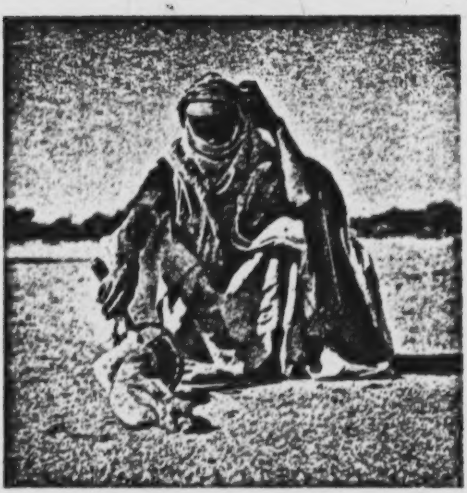

Fig. 115. Negroid agriculturist (*Ḥartani*) with a hare caught in a steel-trap (*elkheniyet*) of European type. Ahaggar.

262 by many people in vassal tribes, and jackal's meat is popular as it is considered an excellent remedy
565 against fever (cf. Nicolaisen 1961, p. 146). But there are also many Tuareg who refuse all types of game
[757] with the exception of such animals as gazelle, barbary sheep, and antelope. Some Tuareg consider hare's meat unlawful, but this, perhaps, is a conception introduced with Islam, for many people of the religious *Ineslemen* class claim that hare should not be eaten because their blood resembles that of menstruating women. The food taboos strictly followed by all noble Tuareg are older than Islam: they never eat birds, eggs, reptiles, and fish.

These rules are not traditional for vassal Tuareg, though some of them have adopted the taboos of the noble Tuareg.

224 In Northern Tuareg areas two big lizzard types are found. One of them is called *agezzeram* (*dobb*
564 in Arabic; *Uromastix acanthimurus*). This is caught and eaten by slaves, agriculturists, and by many
565 vassals. It is frequently taken by hand, but there is also a special implement (*taskumt*, *takoḍa*) consisting
262 of a stick provided with an iron crook for catching lizzards hiding in holes and under rocks. When
[432] vassal Tuareg are able to catch a great many *agezzeram*-lizzards they cut them up and dry them for
[444] sale on their regular trading expeditions in autumn to the sedentary agriculturists of Tidikelt (cf. p. 210). The *agezzeram*-lizzard is said to be the ancestor (the mother's brother) of the negroid blacksmiths (*Ineḍen*), because the lizzard's tail resembles a file. I do not know whether the few blacksmiths found in Northern Tuareg country eat this lizzard, but do not think they do. The lizzard is not considered very delicious, and blacksmiths have emigrated from the south where it is not generally eaten.

The other edible lizzard is named *aṛata* (*Varanus* sp.). It is much bigger than the *agezzeram*-lizzard just mentioned, and its meat is excellent according to the taste of most Europeans. But this big lizzard

is refused by noble Tuareg and in general also by vassals. One reason for this is that the Tuareg have 224
a myth saying that the *aṛata*-lizzard is the ancestor (the mother's brother) of the noble Tuareg. Some 565
vassals claim that it is the ancestor of all true Tuareg, but this statement does not agree with mythology 564
(cf. Benhazera 1908, p. 61). However, this lizzard is eaten mainly by slaves and by certain agriculturists, 262
though its meat is considered a remedy against snake-bite and scorpion stings (cf. Lhote 1951a, 257
p. 168 f.). The head of an *aṛata* is considered an excellent amulet against these poisonous animals 257
(Lhote 1951a, p. 168 f.), and the skin of this lizzard is not only utilized for the manufacture of amulet 237
cases but also for small bags of various types (Fig. 116a).

Small animals are not necessarily killed with any particular hunting implement. The animals may 224
be taken with the hand or killed with sticks and stones, as is the case with the hedgehog (*ékenisi*, 262
tékenisit), which is eaten by some people, and with small rodents. Even hares can be taken with the hand when they hide in the grass or under rocks. The hunter may then approach the hare swinging one of his sandals over his head. This, it is said, makes the animals believe that it is hunted by a hawk or an eagle, and it will therefore remain stubbornly in its hiding place. Even gazelle are sometimes taken without any proper hunting weapon. Some Tuareg say that on journeys through the barren desert country in the summer they have met gazelle so exhausted from thirst that they could take these animals with their hands. Although this is rarely possible, I know Tuareg who have crept up to gazelle hiding from the sun in daytime and killed them with a stone. Finally it can be mentioned that the

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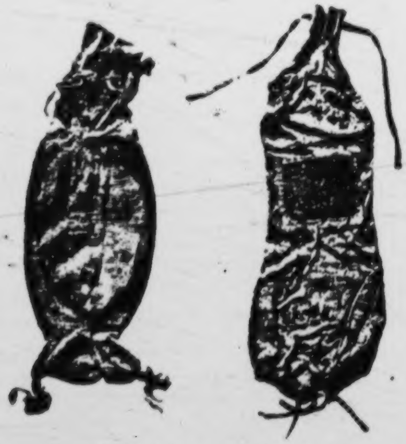

Fig. 116a–b. Two small skin bags.

a. Skin bag (*abelboḍ a aṛata*) made from the skin of the big *aṛata* lizzard (*Varanus* sp.). Ahaggar, *Ḥarratin* of Taṛhawhawt. Dimension: 0.325 m long. (N.M. G. 5834).

b. Skin bag (*abelboḍ a témerwelt*) made from hare-skin. Ahaggar, bought from *Ḥarratin* at Taṛhawhawt, manufactured in the *Afuh-en-tehlé* tribe. Dimension: 0.350 m long. (N.M. G. 5833).

224 [824] Tuareg are also aware of the use of poison. I have gathered no information about this myself, but Lhote states that certain poisonous grain is used for the destruction of jackals and small rodents (Lhote 1951 a, p. 43 f. & 132).

226 It is obvious that fishing cannot be an important industry to people of the Sahara, but fishing is practised in certain areas. One species of fish (*Clarias Lazera*) is found in a few permanent pools of Central Ahaggar, but it is particularly common in the numerous permanent ponds of Tasilé-n-Ajjer, where there is also another, perch-like species. I have myself caught and eaten both species. Duveyrier states that there are three distinct species in Tasilé-n-Ajjer:— (1) *asoulmeh* (*asulmey*) (*Clarias Lazera*): (2) *isattafen* (*i-seffefen*); (3) *imanan* (pl. *imenan*) (Duveyrier 1864, p. 227, 238). Fishing is described by Duveyrier as follows: "Les poissons des lacs de Mihero donnent lieu à une pêche qui contribue à l'alimentation des serfs riverains. A cet effet, ils creusent sur les bords des lacs de petits canaux étroits, aboutissant à des réservoirs dans lesquels les poissons viennent pour y chercher une nourriture qu'ils ne trouvent pas dans les profondeurs des lacs. Quand ils y sont entrés on renferme les conduits et on les prend" (Duveyrier 1864, p. 238 f.). Another fishing method is described by Lhote: "Ils construisent des espèces de fascines avec des tiges de mrokba ou des branches de tamarix, puis, entrant à plusieurs dans l'eau ils forment une espèce de barrage au moyen de ces fascines en les mettant bout à bout et les poussent ensuite doucement devant eux. Ils prennent bien soin de drainer le fond de sorte que le poisson soit systématiquement chassé. Lorsqu'ils arrivent près de la rive opposée à celle d'où ils sont partis, ils poussent rapidement par un dernier effort et éjectent le poison sur le sable ou ils le ramassent. Ils recommencent ce manège plusieurs fois jusqu'à ce qu'ils aient capturé la majorité des poissons" (Lhote 1951 a, p. 53). In Tasilé-n-Ajjer I was told about a third fishing method, namely the use of a piece of cotton (e.g., an old cotton shirt) attached to two poles. The cotton piece serves as a net over which the fish are fed. There seem to be no other fishing methods, as both the fish-hook and the harpoon are unknown. [262] [565]

AYR

136 The Ayr Massif with adjacent plains is very rich in game in comparison with the true desert country inhabited by the Northern Tuareg. Barbary sheep (*éfital*; *Ammotragus lervia Angusi*) are common in the mountains and also south of the Massif around the cliff known as *Falaise de Tigeddi*. Gazelle (*achenkod*; *Gazella dorcas* sp.) (*énir*; *Gazella dama permista*) and the addax antelope (*amellul*; *Addax nasomaculatus*), which are found in Northern Tuareg countries, are more abundant in Ayr where there are also bigger types of game, notably the oryx antelope (*ézem*; *Aegoryx algazel algazel*), and the giraffe (*amder*; *Giraffa camelopardalis*) which is found south and southwest of the Massif (e.g., around Ingal and Aderbissinat). The ostrich (*énhal*; *Struthio camelus*) is still very common in isolated regions of Ayr including the northern outskirts of the mountains, where I have seen flocks of more than twenty birds. There are in Ayr as mentioned above (p. 31) many bird species which are unknown or rare further north in the desert, e.g., the guinea fowl (*taylalt*; *Numida clappertoni clappertoni*) and a bustard species (*agayis*; *Choriotis arabs stieberi*). Game birds are extremely abundant in certain parts of Ayr. The birds come in amazing numbers to waterholes and open wells to drink in the evening at

catching wild donkeys in the mountains around the valley of Anu Meḳḳeren. The method is not used for proper game animals. 224

(7) A pulling and a throwing snare are both known as *tuṛunt*. They are said not to be used for hunting, though commonly employed to catch wild donkeys and domestic animals which have gone astray; cf. p. 108 f.

(8) The spiked wheel-trap (*tawchit*) provided with a noosed rope (*tuṛunt*) attached to a stick. This is used for gazelle and bigger game animals in isolated places rarely visited by representatives of the administration. According to Buchanan, the spiked wheel-trap is used for ostriches in the plains south of Ayr (Buchanan 1921, p. 117 ff.). Large traps of this type are also used for giraffe by certain hunters within the Cercle d'Agadez (Brouin 1950, p. 453).

(9) The torsion trap (*tenderbat*) akin to that of Ahaggar. It is used for big game animals, notably for barbary sheep.

(10) Snares (*tazek*, pl. *t'izagin*) made from strips of dum palm leaves are used for guinea fowl and [223] other edible birds. They are generally set near water where birds come to drink. Little boys of the [257] negroid *Imeggedezen* of Agadez also make snares of hair to catch small birds (Fig. 118).

These are the hunting methods known to the Ayr Tuareg, who do not engage much in hunting with the exception of the *Kel Tamgak* mentioned above. Most Ayr Tuareg refuse the small types of 262 game and beasts of prey, and reject not only the *aṛata* lizzard (*Varanus* sp.), but also the smaller lizzard known in Ahaggar as *aggezzeram*, in Ayr as *emekkechchu* (*Uromastix acanthinurus*), though it is claimed that the latter is eaten among Tuareg of the *Kel Ewey* group. The two lizzards do not play any part in Tuareg mythology – the *aṛata* lizzard is greatly detested by the Ayr Tuareg who kill it with stones or sticks, whenever possible. The Ayr Tuareg, including those of noble descent, have no taboos about birds and eggs, and many pastoral Tuareg collect guinea fowl eggs late in summer after the rains. There are a few animals not mentioned above which are considered edible among the Ayr Tuareg, e.g., the tortoise (*afaras*) which is found in the plains south of the Massif. With the exception of the *Kel Ewey* Tuareg the people of Ayr do not collect locusts (*tahwalt* in Ahaggar, *achwal* in Ayr). Locusts are eaten by all people of the two Northern Tuareg groups. The animals are roasted in the ashes or [252] are boiled in a cooking pot to be pounded in the large mortar together with dried dates. This dish is [832] very esteemed by the women who say that it is fattening and in this way adds to their beauty.

Certain weapons have not been mentioned above because they either cannot be considered proper 411 hunting weapons, or because it is doubtful whether they exist among the Tuareg or not. [114]

Traditional Tuareg arms comprise an iron lance (*allaṛ*), a sword (*takuba*), and a dagger (*télekḳ*) carried in a sheath fastened to the left arm. The iron lance may serve as a hunting weapon, and this is true also of the sword. Thus the Ayr Tuareg of the *Kel Ferwan* group said that wild animals were occasionally killed with the sword, and they claimed that two Tuareg of the past had killed lions with this weapon.

The bow (Ahaggar, *taṛayyé* or *tagaňhé*; Ayr, *taganzé*) and arrows (Ahaggar, *imurren*, sing. *amor*, or *tinassabin*, sing. *tanassabt*; Ayr, *imeran*, sing. *amer*) are not traditional Tuareg weapons. Nowadays [524] very ineffective bows and arrows are used as toys by little Tuareg boys, but they are never used by

[text continues on p. 169]

224 the number of holes in each row and makes a special sign in the sand for even and uneven numbers.
787 There are four possibilities of different signs:— (1) A sign called *tezli* if there is an uneven number of holes in both rows; (2) A sign known as *élélli* if there is an even number of holes in both rows; (3) A sign, *eggur*, if the number of holes is uneven in the right row, but even in the left row; (4) A sign, *tamayit*, if the number of hóles is even in the right row, but uneven in the left. The diviner makes two rows of holes six times successively. Each time he makes one of the mentioned signs according to the distribution of holes, and the result of his divination depends upon the character of the signs and their relative position to each other (cf. Nicolaisen 1961, p. 151 f.). – The Tuareg have other methods of divination which are perhaps also used to predict the result of planned hunting trips. They also know to take omens from the shoulder-blades of wild and domestic animals. When a hunter has killed
[262] a gazelle he will often keep the shoulder-blades for himself, and having eaten the meat he will take omens of future happenings from the structure of these bones. Such shoulder-blades will not be thrown to the dogs – they are hidden under rocks and stones (cf. Nicolaisen 1961, p. 150 f.).

224 Some of the above mentioned usages and beliefs have been mentioned also by Lhote (Lhote 1951 a, p. 180 f.), who has noted a few other customs connected with hunting:—

[825] (8) If a hunter kills a snake he will get nothing. (A particular snake species known to the Ahaggar Tuareg as *émegel* is never killed, as it is considered "sacred" and is referred to as a "marabut").

(9) If two men hunt together, but separate to meet later, the man who comes upon the other must not receive food from him.

(10) Handling the skin of game animals one must not put fingers into a bullet hole. This would cause bad shooting or accidents on future hunting trips, and the rule is observed even with tanned skin.

A few other superstitious usages have been recorded from Ahaggar by Captain Florimond (Rapport Annuel. Ouargla 1940). They are here quoted from Lhote 1951 a, p. 181 f.:—

(11) Hunters of the *Dag Ṛali* take omens from the breaking of sandal straps in the pursuit of barbary sheep. If the straps passing between the toes break the hunter will kill a male, while he will get a female animal if the side-straps break.

[778] (12) When Tuareg of the *Kel Mertutek* (*Dag Ṛali*) leave for a hunting trip they put a stone or pebble on their heads and utter an invocation to hunting spirits which is rapidly repeated ten times.

(13) When *Dag Ṛali* Tuareg set out hunting they take with them a stone from a pre-Islamic tomb. When game is seen they throw this stone far away crying at their dogs: "Go! What you kill shall be *ḥallal* and lawful!"

[777] (14) When a barbary sheep has been killed by people hunting with dogs, the head of the animal is cut off and thrown on the fire while the following words are uttered:— "The smell from the burned skin of the head of the barbary sheep shall forever flatter the hunter's nostrils so that he may have good luck in future hunting also!" Tuareg of the *Kel Mertutek* will add:— "I have taken you from the *Kel Asuf* and I have taken only the blessing they have sold you that you may soon be followed by your peer!"

(15) At the partition of killed game the meat must be handled with slow motions. If not, the dogs will lose their fierceness.

(16) It is believed that a hunter should fix a burning piece of wood in the soil by the fire in which

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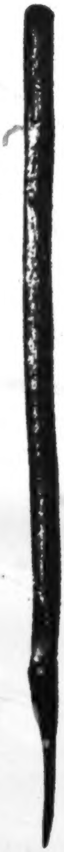

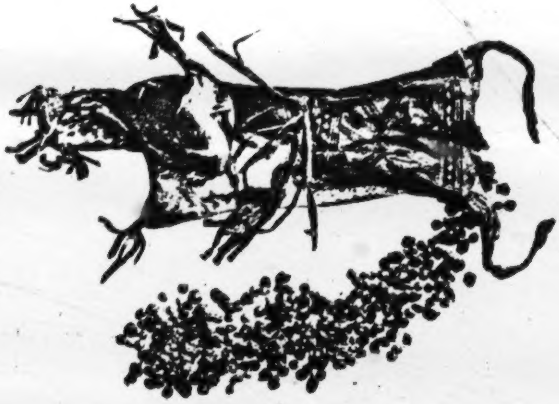

Fig. 123. Digging stick (*élaweǧ*) which serves to dig up wild edible roots and other purposes. Ahaggar, the *Dag Ṛali* tribe. Dimension: 0.883 m (total length). (N.M. G. 5252).

Fig. 124. The wild plant *ihahelewen* (sing. *ahahel*) (*Cistanche Phelypaea*) which yields edible roots esteemed for food (bread). Tasili-n-Ajjer.

Fig. 125. Skin bag of the *téchchékwat* type made from the skin of a kid and containing *adamam* berries (*Osyris alba*). The berries are normally eaten fresh, but are also conserved in skin bags to be eaten later after soaking in water. Ahaggar, the *Dag Ṛali* tribe. Dimension of the skin bag: 0.33 m. (N.M. G. 5244).

Collecting

In this chapter on collecting such edible plants are mentioned as play a part in Tuareg nourishment. 222
Wild plants are also collected for other purposes. Many species are important to craft or have a medicinal 824
value. Some of these latter species are mentioned elsewhere in this study.

EDIBLE PLANTS OF THE AHAGGAR AREA

Wild plants which yield edible fruits, seeds, stems, or roots in Ahaggar comprise more than fifty 222
different species. But the importance of collecting should not be judged from this, as all these plants [262]
are never found within the same area, and most are eaten only occasionally as a kind of relish or when
agricultural food (wheat, barley, millet, dates) is lacking. I have supplemented my own list of edible [114]
plants with important information from Maire's study of Ahaggar botany (Maire 1933 & 1940). In
my list the letters Tr., L.M., and U.M. stand for Maire's botanical zones, namely the Tropical Zone, [137]
the Lower Mediterranean Zone, and the Upper Mediterranean Zone. The following edible plants
are collected in Ahaggar and adjacent regions:—

tirfas (sing. *tarfest*) (*Terfezia ovalispora*). Tr., L.M. A fungus which, according to Maire, lives on 222
the roots of *Helianthemum Lippii & H. ellipticum* known to the Tuareg of Ahaggar as *urruġ* (Maire 262
1933, p. 22, 159 et suiv.). This white fungus, which is frequently termed *tirfas n urruġ* by the Tuareg, 252
is prepared for eating together with various other dishes. It is frequently added to the so-called kus-kus.

tahlé (*Typha elephantina*) Tr. Roots and certain lower parts of the stem are eaten raw or boiled. When vegetable food is scarce they are also pounded or ground into flour.

akeywoḍ (*Typha australis*) Tr., L.M. Roots of this plant are ground into flour.

téseñgelt (*Saccharum Ravennae*). Tr., L.M. "Cette plante ... laisse très souvent exsuder un liquide sucré qui se concrète en masses plus ou moins cristallisées; les Tuareg utilisent ce sucre" (Maire 1933, p. 54).

afeẓu (*Panicum turgidum*). Tr. A perennial grass extremely common in the lower valleys of Ahaggar. Seeds are collected in receptacles (e.g., *ahaga*, Fig. 213) by beating the ears of the grass with a stick. The seeds are not suitable for bread, but are esteemed for porridge and *tébik*, that is seeds pounded
in the mortar and eaten without further preparation. Ashes of this grass contain soda and are often [276]
mixed with tobacco for chewing.

[p. 175]

222 *aṛemmud* (*Aristida plumosa & A. Adscensionis*). Tr. Seeds are edible.

● 262 252 *tullult* (*Aristida pungens*). Tr. A perennial grass found in certain parts of Ahaggar and particularly common further north (Ahnet, Immidir) and in Tasilé-n-Ajjer. Seeds are collected by men and women in the following manner:— The ears are cut with a sickle and placed in a piece of cotton (e.g., a cotton blanket known as *abroṛ*). The ears are left for drying, and threshing is done by beating with a stick. The husks are winnowed as described for wheat and barley (cf. p. 206), and seeds are then stocked in *aġera* (a skin-bag). According to Foucauld collecting may also be done by digging out the nests of ants as these small insects stock a great many *tullult* seeds (Foucauld 1922, p. 29 f.). – The *tullult* seeds are used for bread and porridge, and are also eaten as *tébik* after pounding in a wooden millet mortar. [412]

lewliwen (*Scirpus maritimus*). An annual plant having edible fruit in its roots (cf. Foucauld 1951–52, III, p. 1098).

taleggit (*Juncus maritimus*). Tr., L.M. Young shoots are edible.

izéyan (*Asphodelus tenuifolius*). Tr., L.M. Eaten when vegetable food is scarce.

telokat (*Ficus salicifolia*). Tr. "Les fruits murs, de couleur rouge, sont tendres, un peu sucrés et comestibles" (Maire 1933, p. 76).

[574] *adamam* (*Osyris alba*). (Tr.), L.M. Its red fruits or berries are eaten as a relish. A bowl of berries is frequently offered to guests of Tuareg camps.

tanesmimt (*Rumex vesicarius & R. roseus*). Tr. Inedible according to Foucauld (Foucauld 1922, p. 85), while Foley states that leaves of this plant are eaten after boiling (Foley 1930, p. 42).

tawit (*Chenopodium Vulvaria*). (Tr.), L.M., U.M. An annual herb which is particularly common in the mountain of Asekrem. The small black seeds are collected in bowls or similar receptacles by rubbing the plants with the fingers. The seeds are ground into flour, which is very suitable for bread and porridge.

aramas (*Atriplex Halimus*). Tr., L.M., U.M. Seeds and boiled leaves of this plant are eaten when vegetable food is very scarce.

ébedébed (*Boerhavia agglutinans & B. repens*). Tr. An annual plant with edible seeds.

éhéyefyef (*Aizoon canariense*). An annual plant resembling the *twuit* plant and particularly common in the upper mountain zone. Seeds are used for bread and *tébik*, but not for porridge.

aġar (*Maerua crassifolia*). Tr., (L.M.). A tree yielding edible fruit.

tadant (*Boscia senegalensis*). A tree or bush which is extremely rare in Ahaggar where its edible fruit are consequently consumed very rarely.

aggasit (*Farsetia Hamiltonii*). Tr., L.M. A seed-plant.

aheṛeṛa (*Alyssum libycum*). An annual plant which is rare in Ahaggar, while common in Tasilé-n-Ajjer. Eaten after boiling in water.

azezzeġa (*Diplotaxis acris*). The plant is rare in Ahaggar. Its leaves are boiled and eaten.

tanekfayt (*Eruca sativa*). Tr., L.M. Leaves are eaten raw or boiled.

tamaġhé (*Moricandia arvensis*). (Tr.), L.M., U.M. An annual plant – a kind of wild cabbage.

alwat (*Schouwia purpurea*). Tr. An annual plant. "Les Touareg mangent la feuille cuite et essorée, sans sel. La plante jeune donne une salade assez analogue à la Roquette, quoique d'un goût moins agréable" (Maire 1933, p. 111).

abellengaḍ (*Reseda villosa*). Tr., L.M., U.M. Seeds of this plant are edible, but of bad taste – according to Foucauld 1951–52, I, p. 65. 222 262

abseṛ (*Acacia Raddiana*). Tr., (L.M.). Fruits are collected mainly for goat fodder, but are eaten by human beings when vegetable food is scarce. The fruit is then crushed into flour. The resin of this acacia is also edible. 252

tamat (*Acacia seyal*). Tr. The resin (*taynwst*) is edible. I believe it is used mainly as a remedy against stomachache. This is perhaps also true of the resin of the *abseṛ*-acacia mentioned above. 757

ahtes (*Acacia albida*). Tr., L.M. "La gousse est même comestible pour l'homme" (Maire 1933, p. 120).

ténefé (*Tephrosia leptostachya*). Tr. "Les Touareg mélangent cette plante desséchée au thé vert" (Maire 1933, p. 125). 272

laġul (*Alhagi maurorum*). Unknown in Ahaggar, but found in Tasilé-n-Ajjer. "Les racines tuberisées sont mangées par les indigènes (Killian)" (Maire 1933, p. 131).

aloṛa (*Peganum Harmala*). Tr., L.M., U.M. An annual seed-plant. Seeds are used for *tébik*.

taburaḳ (*Balanites aegyptiaca*). Tr., L.M. A tree having edible fruits which are macerated in water to remove the bitter taste.

tedjoq (spelling according to Maire 1933, p. 241) (*Pistacia atlantica*). L.M. Very rare according to Maire (1933, p. 148). According to my own observations the fruit of this tree is eaten by Arab pastoralists (e.g., *Ulad Nail*) of the so-called *daya* region south of the Sahara Atlas. It is possible that it is also eaten by the Tuareg. 171

tahunek (*Rhux oxyacantha*). Tr., L.M. A tree having edible fruit.

téhaḳ (*Salvadora persica*). Tr. A tree with edible fruit.

tabakat (*Ziziphus lotus* var. *Saharae*). Tr. The berries are crushed and mixed with millet flour.

aẓawa (*Tamarix gallica*). Tr., L.M. "La manne produits par ces arbres est receuillié par les indigènes qui l'emploient comme matière sucrante. (Voinot)" (Maire 1933, p. 156).

tabarekkat (*Tamarix aphylla*). Tr. "Les rameaux mannifères sont employés pour sucrer l'eau" (Maire 1933, p. 159). 263

tafeltast (*Myrtus Nivellii*). (Tr.), L.M. "Les rameaux de ce Myrte sont récoltés par les Touareg, 439
desséchés et exportés par sac entiers au Soudan et au Mzab, avec *l'Artemisia judaica* ssp. *sahariensis*. 752
Ces deux plantes sont utilisées comme médicaments et comme condiments" (Maire 1933, p. 162). 263

awkal (*Cynomorium coccineum*). Tr., L.M. A plant yielding edible roots which are dried and ground into flour (cf. Maire 1933, p. 163).

aséyar (*Anethum graveolens*). (Tr.), L.M., U.M. An annual plant. Its seeds are used as a spice and for adding to tea. 272

takmezzut (*Teucrium Polium*). Tr., L.M. An annual plant used for adding to tea.

élel (*Nerium Oleander*). Tr., L.M. This plant is extremely venomous particularly so for camels, which die from eating its leaves. "La cendre de bois de *Nerium* est employée par les femmes du Tidikelt pour se faire engraisser. A cet effet elles mélangent un peu de cette cendre avec des dattes pilées et du beurre, puis absorbent ce mélange dans du leben" (Maire 1933, p. 170). 261

aṛellachchem (*Solenostemma oleifoleum*). Tr. A perennial plant. Its leaves are used as a substitute for tea. 272

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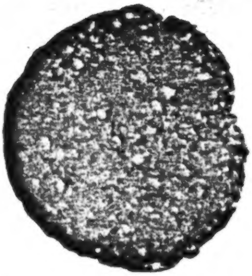

Fig. 126. A cheese-like mass of *adamam* berries (*Osyris alba*). The fresh berries are pounded in the large mortar (*tindé*) or are crushed between two stones to be formed into pieces of cheese form to be dried. This cheese-like mass of *adamam* berries is used by Tuareg women as a kind of face ointment against sun burn, pimples, and the like. They apply this ointment to the face as follows:— A little milk is poured upon a stone, the cheese-like mass of berries is rubbed against it, and the mixture of milk and berries is thereupon rubbed into the skin of the face with the fingers. Ahaggar, the *Dag Ṛali* tribe. Dimension: 0.075 m. (N.M. G. 5279a).

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● 262 *enag* (*Leptadenia pyrotechnica*). Tr. A tree with edible fruit.

[272] *tañhart* (*Mentha longifolia*). Tr., L.M. An annual plant. Used as an aromatic for adding to tea.

awit, generally known by the collective name *awihat* (*Salvia Chudaei*). Tr., (L.M.). An annual plant used as an aromatic for tea.

[824] [682] [261] *éfelehleh* (*Hyoscyamus muticus* ssp. *falezlez*). Tr. This plant is extremely venomous for human beings, though not for animals. In the past it was used by the Tuareg as a poison for enemies. Members of La Mission Flatters (1880–81) were poisoned by the Tuareg using poison of this plant inserted into dates presented to the expedition. "La plante, absorbée à petite dose, aurait la propriété de faire engraisser. Les femmes du Tidikelt l'emploient dans ce but, en en faisant cuire une petite quantité dans de l'eau avec de la farine et de la graisse; elles laissent réduire et absorbent la bouillie obtenue, puis se couvrent pour transpirer (Voinot)" (Maire 1933, p. 192).

222 262 252 *ahahel* (*Cistanche Phelypaea*). Tr., L.M. A plant yielding edible roots. After drying the roots are pounded in a large millet mortar to be used for bread which is much esteemed by the Tuareg. "Cette plante est recoltée jeune par les indigènes, puis placée dans le sable sous une couche de *drinn* (*Aristida pungens*) jusqu'à noircissement et dessication. Le produit sec est moulu et utilisé dans l'alimentation (Voinot)" (Maire 1933, p. 196).

éfetekchi (*Orobanche aegyptiaca & O. cernua*). Tr., L.M. A plant yielding edible roots.

tamẓellit (*Orobanche sp.*). Tr. Very rare. A plant yielding edible roots.

teġellet (*Colocynthis vulgaris*). Tr. Seeds are eaten after boiling and drying.

alkeḍ (*Cucumis pustulatus*). Tr. Rare. Seeds are eaten after boiling and drying.

[263] *takkilt* (*Cotula cinerea*). Tr. "Les Touareg utilisent cette plante comme condiment, principalement pour la viande qui commence à se gâter" (Maire 1933, p. 209).

[437] *téheréġġelé* (*Artemisia judaica* ssp. *saharlensis*). Tr., (L.M.). "Cette plante, comme le *Myrtus Nivellei*, est récoltée en grande quantité, séchée et exportée au Soudan, où elle est employée comme aromate et condiment" (Maire 1933, p. 212).

[272] *zézzeré* (*Artemisia herba alba*). (Tr.), L.M. Used as an aromatic for adding to tea.

ajako. According to Foucauld a small annual edible plant growing in the Ahaggar Mountains at an 222
altitude above 2000 metres (Foucauld 1951–52, II, p. 712). Maire mentions this plant as unindentified 262 ●
(Maire 1933, p. 263).

Collecting is mainly the task of women, but males – particularly uninitiated boys and slaves – also 222
participate. Seed-plants are generally harvested by rubbing the ears of the plants between the fingers, [262]
but the *tullult* grass (*Aristida pungens*) is cut with a sickle (*amreh*; Fig. 143 a–b) to be thrashed and winnowed like wheat and barley. Edible roots are frequently collected merely by hand. However, a digging [412]
stick (*élaweġ*; Fig. 123) provided with an iron point is also used to dig up certain wild plants such as *ahahel* (*Cistanche Phelypaea*) and similar root plants. This digging stick is characteristic of vassal [265]
women who use it for many different purposes, e.g., to make holes for tent poles.

The very best among the above mentioned seed-plants is the *tullult* grass (*Aristida pungens*). Its seeds are collected or harvested by certain Tuareg inhabiting the lower parts of Ahaggar, but are important particularly to the Tuareg living in and around Tasilé-n-Ajjer. Within the Ahaggar Massif the most important seeds are those of *afeẓu* (*Panicum turgidum*) and *tawit* (*Chenopodium Vulvaria*). The right to collect these seeds is free to everybody, and Tuareg of the *Abada* zone may send their [567]
slaves to the *Atakor* zone to collect *tawit*-seeds in the mountain plateau of Asekrem. The species of [221]
afeẓu and *tawit* are sometimes protected by an ban on grazing for three and two months respectively in order that their seeds may grow ripe for collecting. The right to put a ban on grazing of the two [423]
species belongs to the Tuareg in whom territorial rights of a sub-area are vested (cf. p. 150). It is said that under very favourable conditions a single household may collect some hundred kilos of seeds of the two plants mentioned. This may seem rather impressive, but even in good years when milk is [262]
abundant collecting will not provide pastoral Tuareg of Ahaggar with sufficient vegetable food, for seeds of wild plants are far less nourishing than are grains of wheat, barley, and millet. The collecting of wild plants important for food is as dependent on climatic conditions as is stock-breeding. In dry years, when domestic animals yield little or no milk at all, there will also be no wild seeds for collecting.

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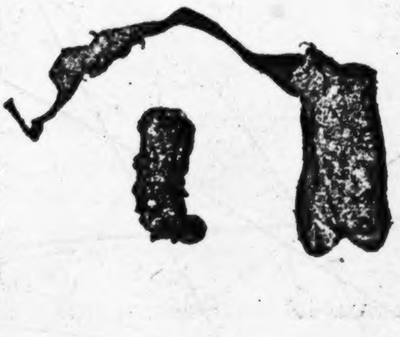

Fig. 127. Very small bag known as *élem* ("skin") made from a kid's scrotum (*tigassaté*). The bag contains a piece of resin of the *tamat* acacia (*Acacia seyal*). This resin is eaten by the Tuareg as a remedy against stomachache. Ahaggar, the *Aġuh-en-tehlé* tribe. Dimension of the piece of resin: 0.07 m long. (F.M. 149 a–b).

222 136 [433] Even in good years it may happen that edible seed-plants are eaten by locusts before they become ripe for collecting. Collecting is of secondary importance to the Tuareg of Ahaggar though to most pastoralists it is more important than hunting.

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131 137 222 [433] We have seen that Ayr has better grazing grounds and more game than Ahaggar, and it is only natural that this southern area is also a more favourable one for the collecting of wild plants. Nevertheless, it seems as if collecting is not so important to the Ayr Tuareg who have more livestock for which millet and wheat can be obtained without much difficulty. The number of edible plants utilized in Ayr is probably a very large one. Thus it is said that certain *Kel Ewey* Tuareg collect many different plants, but my inquiries into the methods and the value of collecting were limited to Tuareg of the *Kel Ferwan* drum-group of Southern Ayr where the following species are collected for food: –

222 262 *afagag* (*Acacia Raddiana*). Pods of this acacia are dried and, after pounding in a large millet mortar, mixed with milk to be eaten or drunk like the Tuareg dish known as *arejira* (cf. p. 245 f.).

252 *ébezgin* (*Salvadora persica*). Fruit is eaten without any preparation.

tadent (*Boscia senegalensis*). Berries are pounded in the millet mortar to obtain the limpid juice which is added to porridge.

[824] *tagayt* (*Hyphaene thebaica*). The dum palm, which is of extreme importance for the handicraft of the Ayr Tuareg, is also valuable as food. The young nuts are opened with a knife and the kernels are eaten. The old nuts have an edible outer coating which is eaten by children and even by adults when they are hungry. These old nuts are also pounded in the millet mortar together with seeds of *ageruf*, cf. below.

afezu (*Panicum turgidum*). This perennial grass is very abundant all over Ayr. Collecting of its seeds is done by rubbing the ears of the grass between the hands to allow the seeds to fall into a plaited bowl. Seeds are pounded in a millet mortar to be used for porridge.

ichiben, that is seeds of an annual grass – apparently identical with *Panicum longiflorum* and/or *P. spinosa*. The seeds are collected in two different ways: – (1) If the ripe seeds have fallen to the ground they are swept together with a bunch of straw. (2) The ears are cut with a knife to be threshed by pounding in a millet mortar. The seeds are highly esteemed, being collected to a greater extent than seeds of other wild plants. The seeds are used particularly for porridge, but also for certain other dishes such as *arejira* (cf. p. 245 f.).

téjit (*Eragrostis* ssp.). A grass yielding red seeds collected in the following way: – The ears are beaten with the hands so that the seeds fall into a plaited bowl. The seeds are used only for porridge.

wujjeg (*Cenchrus catharticus* & *C. Prieuri*). Annual seed-plants with thorny seeds. The dry plants are beaten with a stick and the fallen seeds are collected in a heap to be threshed with a stick. The seeds are pounded in a millet mortar for porridge.

ageruf (*Tribulus terrester*). An annual plant with thorny seeds which are collected as just described for the *wujjeg* plants. The seeds are pounded in a millet mortar to be eaten without further preparation

a dish known to the Ayr Tuareg as *tederka*. For this purpose the pounded seeds may also be mixed 222
with pounded dum palm nuts. 262

acheror (*Sorghum virgatum*). A tall grass the seeds of which are swept together when fallen to the 252
ground. They are used for porridge.

agazagi. Edible seeds of a grass. They are swept together when they have fallen to the ground, and are used for porridge.

agedagedu. Seeds of an annual plant. When they have fallen to the ground they are swept together by means of a straw bundle. They are pounded in a millet mortar to be eaten as *tederka* without any further preparation.

malokhiya (*Corchorus tridens*). A plant growing in the bush though also grown in gardens. The leaves of this plant are dried and thereupon pounded in a millet mortar to be used as an admixture to porridge-sauce.

abezey (*Cassia tora*). Leaves of this plant are plucked with the hand, or, if the plant is dry, shaken into a plaited bowl. They are pounded and used as an admixture to porridge-sauce.

kat'aket'i (*Cistanche* sp.). It is said to be known as *achellewen* among Tuareg of the *Kel Ewey* group. The edible roots of this plant are dug out with a stick. They are pounded and boiled for a kind of porridge.

acheku (*Glossonema Boveanum*). An annual plant with small lacteal fruit which is eaten as a relish without any preparation.

These are the plant species collected by the *Kel Ferwan* of Southern Ayr. It may happen that some of 222
these plants are destroyed by locusts, but in most years there are excellent possibilities of collecting
wild seeds. Most plants are collected late in summer after the rains (at the season of *rarat*), or in [221]
winter (*tigrest*). It is said that in good years more than a thousand kilos of wild seeds can be
collected by the members of a single household, but even this amount of wild seeds does not answer
the need for vegetable products. Collecting is of secondary importance to the *Kel Ferwan* Tuareg. [433]
Very few of the plant species mentioned are collected if there is abundant millet. The main exceptions
are the plants used for sauce-admixture, and the *ichiben* seeds. The latter are collected even by Tuareg
who have enough millet, because porridge made from these seeds is considered a very delicious dish.

The two groups of Northern Tuareg and also the Tuareg of Ayr acquire their vegetable food 433
products mainly from agriculture, which occupation will now briefly be described.

[text continues on p. 183]

243 Wheat and barley grown in winter constitute the most important crops in Ahaggar, but, as mentioned, ● [262] the gardens are also cultivated at other seasons, and crops of millet and sorghum taken in summer are most important substistence for irrigation farmers in Ahaggar. Millet is known to the Tuareg as [171] *énélé*; it seems to be the same species as that so widely grown by African agriculturists of the savannah countries (*Pennisetum typhoideum*, or *P. Americanum*). Millet is sown in June-July and harvested in September, [221] or in October. Little work is involved with the cultivation of this plant which is never watered [461] much (cf. p. 184), and the agriculturists do not carry fresh soil to the millet plots as they do to plots of wheat and barley. Species of sorghum are less important than millet. The common species is known as [386] *abora* or *tafsut* (*Andropogon Sorghum*). Another species is known as *tallak*; it has smaller seeds than the species just mentioned, and is grown mainly because of its stems, which are reduced to powder to be used for dyeing skins red (cf. p. 282).

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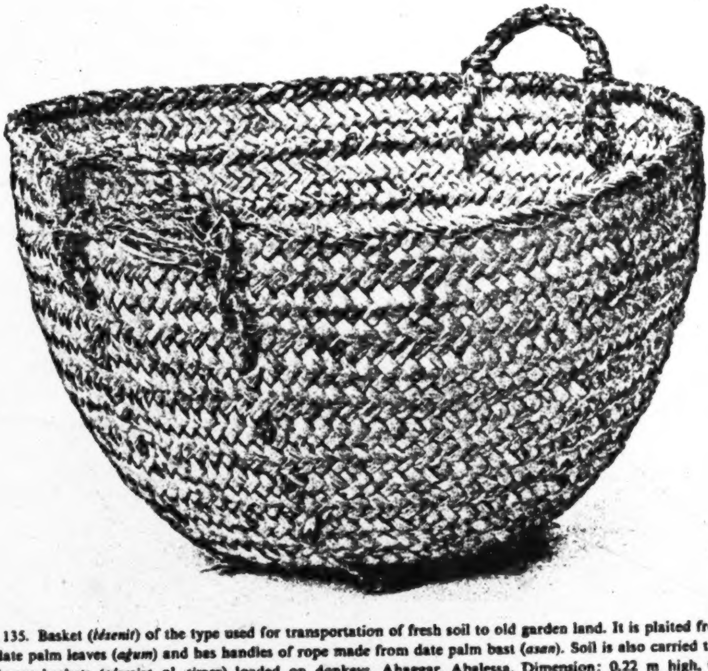

Fig 135. Basket (*tésenit*) of the type used for transportation of fresh soil to old garden land. It is plaited from strips of date palm leaves (*ağum*) and has handles of rope made from date palm bast (*asan*). Soil is also carried to gardens in larger baskets (*téγerirt*, pl. *tiγrar*) loaded on donkeys. Ahaggar, Abalessa. Dimension: 0.22 m high, 0.35 m in diameter at the rim. (N.M. G. 5285).

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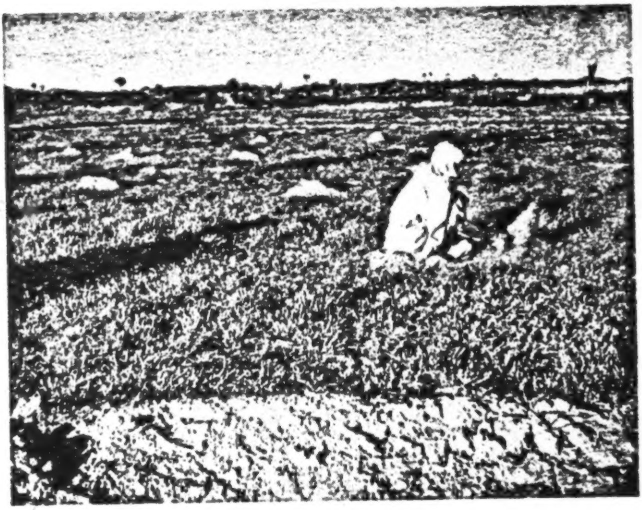

Fig. 137. The fresh soil carried to old gardens is placed in small heaps to be spread out between the tender plants of wheat and barley. Ahaggar, Abalessa.

241 *andrum sativum*, *Cuminum Cyminum* (*azkar*), *Daucus Carota* (*ezzeruget*), *Cucumis melo*, *Lagenaria vulgaris* (cf. Maire 1933, and particularly Maire 1940, p. 401).

245 In addition to the above-mentioned plants there are various types of fruit trees which do not play
[262] any considerable rôle for food. The gardens contain very few date palm trees (*tazzayt*, *Phoenix dactylifera*) and there are no palm trees of any value in the gardens situated in the upper mountain zones where the fig tree (*tahart*, *Ficus carica*) thrives much better than in the lower country; the figs are
[251] consumed fresh, or they are put on strings for drying, common practise elsewhere in North Africa. The
[386] pomegranate (*terrummant*, *Punica Granatum*) is grown in some gardens; its fruits are eaten, and they are also used for dyeing skins (cf. p. 282). Grapes (*tezzebibt*, *Vitis vinifera*) are also grown in some gardens.

Maire mentions the cultivation of the peach (*Prunus Persica*) and the apricot (*Prunus Armeniaca*) (cf. Maire 1940, p. 401). These fruit trees have undoubtedly been quite recently introduced for Foucauld states that they are not grown in Ahaggar (cf. Foucauld 1951–52, I, p. 79 f.).

243 There are nowadays many agriculturists who have their private gardens so that they cultivate their
423 winter crops and their summer crops entirely for their own use. But most agriculturists grow winter crops of wheat and barley on behalf of the Tuareg who are then the true garden owners.

[312] Agriculturists who cultivate their gardens on their own behalf frequently irrigate crops by means of draught animals (zebus) which raise water from wells, but there are also some farmers who cultivate
[476] independently without any contract with pastoral Tuareg and nevertheless belong to a *foggara* team.
243 It can be estimated that an independently working agriculturist obtains a total yield of about 700 kilos of wheat and barley grown in winter. Of this yield he gives 10 kilos to the *Amenukal*, or to the

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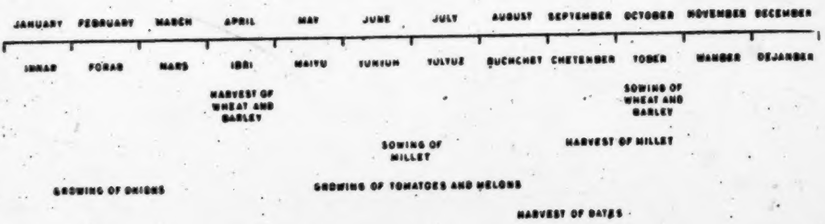

Fig. 139. Horticultural calendar from Ahaggar.
The Tuareg and the negroid agriculturists have a lunar calendar of twelve months corresponding to the Arab calendar, but a lunar calendar has no practical value for the indication of seasonal agricultural activities. The Julian Calendar is known to some people of Ahaggar as well as to other Berbers of the Sahara and the Atlas. Tuareg names of Julian months are given above. Very few people in Ahaggar know the exact beginning and the end of the twelve Julian months, but a few names are used as seasonal terms: *innar* = "midwinter", *mars* = "beginning of spring", *ibri* = "early harvest" (of wheat and barley), *maiyu* = "beginning of summer", *tober* = "late harvest" (millet).

241 which no definite figures can be given, while the yield of fruit trees growing in the garden plot does
[423] not necessarily belong to the agriculturist. These trees frequently belong to pastoral Tuareg.

433 I think it can be estimated that an agricultural household with its own garden produce about a
262 thousand kilos of vegetables food products annually for its private use. We can add that though the members of an agricultural household live mainly on vegetable food products they also acquire a certain amount of food from livestock, which normally comprises a few goats and sheep, and perhaps one or two zebus. Conditions of stock-breeding are not always favourable to people who live continuously on the same spot, but it is advantageous to the agriculturists of Ahaggar, who live close to valleys with some pasture, that they are able to feed their animals on green garden products when pasture is badly developed and thus avoid the disaster of a drought. It is also an advantage to most agriculturists that they do not have to water their animals which can drink freely from the irrigation canals. The agriculturists can kill a few goats or sheep annually, they obtain milk and a little butter
[234] to be used mainly as a sauce for bread and porridge, and they make cheese of the *awles* type (cf. p. 224), but they never make cheese from fresh milk as do many pastoral Tuareg when milk is abundant. The agriculturists also breed fowls and pigeons, and some of them have an important meat supply from hunting with steel-traps (hares, jackals, fennecs, and ravens). Collecting, on the other hand, is of little or no value to irrigation farmers of Ahaggar.

241 The economic position of agriculturists who work without any particular obligations towards
466 pastoral Tuareg is tolerably good. It is less favourable to those who grow winter crops also on behalf
[423] of the Tuareg, as do most cultivators. Some of them irrigate the garden plot with water raised from
[511] wells by oxen which may belong to the cultivator or to the Tuareg. But most agriculturists who work
241 for the pastoral Tuareg irrigate by means of *foggara*. It is very strenuous work to dig a *foggara* canal,
312 and co-operation is needed not only for this but also for the maintenance of the whole irrigation system.
466 The gardens are individually tended by the agriculturists, who co-operate in the *foggara* work under
476 the leadership of a headman known as *amrar n efeli*, that is "chief of the *foggara*". This headman is

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obtain a larger amount of vegetable food products and more wheat and barley. The pastoral Tuareg gain less from their gardens than they did when the *khamast* system prevailed, but it is still profitable for them to be garden owners.

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The quantity of agricultural products anually consumed per person among the *Kel Ahaggar* is estimated by Lhote at 187 kilos millet, 15 kilos dates, and a small amount of wheat for which no figure is given. For Arabs of the Sahara the quantity of vegetable food is estimated at 180 kilos wheat, and 75 kilos dates anually per person (Lhote 1955a, p. 263). I add to this that wheat is used for bread to a very large extent by the Ahaggar Tuareg, who also make much use of barley for bread and porridge. According to Malaurie the amount of agricultural food products available per person among the Ahaggar Tuareg is about 400 grammes a day, or 146 kilos anually (Malaurie 1953, p. 342). It should be noted again that the amount of agricultural food products necessary for a Tuareg household varies greatly from one year to the other. In years of drought when agricultural products form so to speak the only source of food for the nomads, they estimate that a household consisting of husband, wife, and one child will consume about two kilos of cereals (dates) every day, or 730 kilos in a year. Consequently the amount of cereals and dates consumed anually per person may in dry years rise to

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about 245 kilos. This seems to correspond to the amount of food considered necessary for Arabs of Tidikelt and Tawat, who live almost exclusively on cereals and dates. When employed as labourers by the French Administration these sedentary Arabs are given 16 kilos of wheat and 4 kilos of rice a month, or 240 kilos of agricultural products anually per person (Information obtained from the administration

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office of In Salah in 1954). The agricultural products obtained by a pastoral household from a single garden will not meet the needs of the household and its slaves even in years of good grazing, and less so in dry years when pastoralists subsist entirely on agricultural food products. I give an example: During the year 1954 55 which was extremely dry, a Tuareg who owned three gardens cultivated with an *ofil* agreement could not feed his household and his slaves (comprising two men, two women, and three children from five to twelve years old) by means of his own garden products. The Ahaggar

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Tuareg depend on caravan trading for their provisions of agricultural food, and trading also helps them to create the capital of millet and dates which is invested in their gardens in Ahaggar grown on their behalf by agriculturists. I believe that most pastoral households of Ahaggar have gardens, but there are Tuareg who have none. This is true, for instance, of most Tuareg living in and around the Ahnet Massif. Tuareg of this region formerly had gardens irrigated by the *foggara* system at Abalessa, but to-day they acquire their vegetable food products mainly by caravan trading.

IRRIGATION AGRICULTURE IN AYR

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The largest aggregation of sedentary people in Ayr is found in Agadez (4.737), which is inhabited almost exclusively by negroid peoples who speak Hausa though most of them also know the Tuareg language (*tamachek*). This large sedentary population mainly lives on trade and on crafts of various kinds. The inhabitants are known to the Tuareg as the *Imeggedezen*. They are said to be related to the Sultan (or the *Amenukal*) of Agadez. There is a tradition which claims that the Sultan came

162 tion that subsisted on agriculture. Most members of the *Kel Ewey* group are fairly negroid in appear-
144 ance, and though some of them lead a nomadic life and subsist mainly on stock-breeding, the bulk of
433 the *Kel Ewey* are sedentary agriculturists who have some livestock comprising goats, sheep, zebus,
and sometimes camels also. Among the fair-skinned Tuareg of the *Kel Ferwan* drum-group there are
very few sedentary agriculturists, though a few vassals have taken up irrigation agriculture in recent
times. There are also agriculturists within the negroid group of the *Kel Ferwan* known as *Iṛawélen*.
[567] Some *Kel Ferwan* Tuareg have gardens cultivated by their slaves, but this is not customary nowadays
when slavery is of little importance in Ayr. Contracts between pastoral Tuareg and cultivators
241 are said to have been unknown until recent times when a few pastoralists have made contracts with
466 cultivators. There seem to be no fixed systems regulating such relationships, but it is said to be common
for the cultivator and the Tuareg to divide crops equally between them.

241 Though agriculture could be practised in Ayr without artificial irrigation there are no rain-grown
312 crops within the Massif nowadays. The *foggara* system is unknown, and irrigation is done by raising
water from shallow wells. The system of a pole and bucket provided with a counterweight known in
Ayr as *aseftan* has disappeared quite recently. It was used at many agricultural settlements of Ayr
until a few years ago, and in parts of the country formed the only type of irrigation system at the time
of the French occupation. One informant told me that in his boyhood about 35 years ago no other
irrigation method was employed at Alarses, and this is in agreement with literature (cf. Capot-Rey
1953a, p. 322). At that time, however, the method of raising water from wells by animal traction
(in Ayr *anu*, in Ahaggar *tanut*) was also practised at many settle[illegible] is unknown when it came
to Ayr, but it is said to have been introduced from the north – probably from the regions of Fezzan
[492] and Tasilé-n-Ajjer from where the same system came to Ahaggar (cf. p. 187). It is now used at all
settlements as the only type of irrigation system, and zebu-oxen are always used for traction. This
was not so in the past when zebus were less common than to-day, and it is said that donkeys were
then the common draught-animals. The irrigation of gardens is performed in much the same way as
in Ahaggar. The water raised from the shallow well (*anu*) is led through a narrow canal (*aṛelal*) to a
large basin (*tisemt*) from where another canal (*duki*) leads to the garden (*afarag*), which is divided
into a number of beds (*éfenṛal*).

243 Cereals form the most important crops in Ayr. The common winter crop is wheat (*elkama*; *Triticum
vulgare*), but also barley (*Hordeum tetrastichum* var. *pallidum*) is very widely grown. One crop of these
two cereals is taken every winter, and it is said that the period of growth is about five months; sowing
is done in October, harvest in March. Cereals are also important for summer crops. Both millet (*énélé*;
Pennisetum typhoideum) and sorghum (*abora*; *Sorghum caudatum*) are grown, and millet, as we have
[262] seen, has a very short period of growth – only about two months (cf. p. 184). But though millet is
most important as food for agriculturists and pastoral Tuareg alike, it is not widely grown because
it is difficult to protect it from the numerous small birds and because, it is said, millet grown in Ayr
[439] is of a quality inferior to that of the Sudanese type. Most of the millet eaten in Ayr is therefore imported
from Damergu by pastoral Tuareg. By far the most important summer crop grown in Ayr is maize
(*Zea mays*), which is known to the Tuareg as *abora maser*, that is "Egyptian sorghum" (*abora* =
[286] sorghum; *maser* = Egypt) (the name *maser* is also used to designate the white cotton used for garments

Caravan Trading

Caravan trading of the Sahara has suffered severely from the European colonisation of Northern 178
Africa. The establishment of ports and railways in the Sudanese area and the abolition of the slave- 437
trade have brought to an end the large caravans passing through the desert. In recent times another 484
heavy blow has been struck against the caravans, for transportation is more and more taken over
by trucks which can easily pass through the open desert country. Many pastoralists of Northern [433]
Africa suffer from the decline of their trade, which for centuries has been an important stabilizing
factor for their subsistence. The decline of caravan trading is also strongly felt in the oases, which [361]
have played a very important part as trading posts or trading stations. Some of these oases have far [161]
fewer inhabitants nowadays than in the past, and it is most difficult for many sedentary people of the
oases to exist. The decline of the trade has been felt also among the pastoral Tuareg. But caravan
trading is still important to most of them, and many of them could not support life without it. To
understand the important role of caravan trading we have once more to return to the economic values
of subsistence activities.

CARAVAN TRADING OF THE AHAGGAR TUAREG

The Ahaggar Tuareg cannot live exclusively on stock-breeding products all the year round – not even 433
in good years when annual pasture is well developed in autumn and early winter. Even in a good 262
year the nomads mainly eat vegetable food throughout the hot season, and some bread or porridge
is also consumed during the period of abundant milk yields. It is true that nomads can subsist entirely
on milk for long periods, and that some people do so for weeks or even months. Galan says that
pastoralists of of Ahaggar, when they live entirely on milk, can do with four litres a day per person
(Galan 1951, p. 231). But it is estimated by the Ayr Tuareg that they need about eight or ten litres a
day to live entirely on milk, and they all claim that they get weary from constant milk drinking. They [261]
say that though they do not feel hungry when they live exclusively on milk they experience a peculiar,
unpleasant feeling in the stomach. The relative importance of stock-breeding products (mainly milk)
and vegetable food (mainly wheat, millet, and dates) may be seen from the diagram Fig. 151.[1] In a
good year there is normally some possibility of collecting wild seeds for bread and porridge, but the
Tuareg claim that they cannot easily cover their need of vegetable products even in a year when milk
is abundant. And milk is not always abundant. We can estimate that for two or three good years 433

[p. 209]

[1] [cf. p. 216]

433 there will be one entirely dry year throughout, during which stock-breeding products have little or no value as food, and in such years of dry pasture there will also be very few wild plants to collect. Hunting, which plays little part for most Tuareg nowadays, is also of little value in an entirely dry year when many game animals die or migrate to other regions with more favourable pasture. It would seem obvious for pastoral Tuareg to do the same and to take their animals to grazing grounds outside of Ahaggar – particularly to the southern plains where pasture is normally better than in their own country. We have seen that most Ahaggar Tuareg in bad years have their she-camels far from Ahaggar in the Tamesna plains or in the country north of Adraṛ-n-Foṛas. We have also mentioned that, under very severe conditions, camps of Ahaggar and Ahnet may move to these southern regions with their flocks, though extensive goat-migrations are not always profitable. But most Tuareg remain in Ahaggar even in very dry years with their camps and flocks. Some of the animals will die, and none of them
262 can be mated so that the flocks may rapidly decrease. During such years of drought the Ahaggar
[241] Tuareg live so to speak exclusively on agricultural food products of which they get only a part from their gardens grown by sedentary agriculturists (the *Ḥarratin*, or *Izzegaṛen*). It is mainly through cara-
[437] van trading that the Ahaggar Tuareg acquire their vegetable food products. Their two important trading
[484] expeditions to the Tidikelt oases and to the Sudan are carried out anually for the main purpose of acquiring dates and millet.

437 Trading with the Tidikelt oases (Awlef and In Salah) is based mainly upon a surplus of goats, camels,
439 butter and cheese, and on dried meat. But many Tuareg who obtain large amounts of millet from the Sudanese trading expedition also sell part of their wheat grown in their own gardens in Ahaggar, and Sudanese articles bought during their south-bound trading expedition. In a dry year some Tuareg may choose not to visit the Tidikelt area as they have too small a surplus for trading. The south-bound cara-
[312] vans, on the other hand, are rarely prevented from going as their main trading object is rock-salt of an excellent quality mined at Amadṛor north-east of the Ahaggar Massif. Both north-bound and south-
[221] bound caravans will set off in autumn when the hottest season has come to an end, that is at the end of September or at the beginning of October.

487 The caravan route from Tamanṛaset in Ahaggar to In Salah in Tidikelt is about 750 kilometres, and the route is rather difficult because pasture is normally lacking for three to four days of the
484 journey. Most Tuareg who cross this part of the desert therefore bring with them large supplies of
[824] the dried *tullult*-grass (*Aristida pungens*), which also serves as fodder for the pack-camels during the stay in the oases around which there is little pasture. The journey takes about twenty days in each direction, and the north-bound caravans return to Ahaggar again already in December or in January.
439 The traders return with their camels loaded with dates of which a part may be re-sold in Ahaggar (Tamanṛaset), but they also buy European cotton and other European articles, which are cheaper in the north, and woollen blankets woven by sedentary people of the northern oases.

484 The south-bound caravans are very extensive. The towns visited in the south are Agadez, Tawa
487 Tanut, and Zinder. The distance from Tamanṛaset to Zinder is, as the crow flies, about 1200 kilometres, while the distance from Tamanṛaset to Amadṛor, where salt is mined, is about 305 kilometres. In total the caravan journey from Ahaggar to Zinder and back again for many Tuareg amounts to more than 3000 kilometres. The south-bound caravans are organized as follows:— Slaves take the

433 439 in the Sudan for such articles as camel saddles, sandals, swords, millet mortars, indigo cotton, earthenware pots, and the like. The Tuareg may also buy quantities of butter and cheese for sale to the sedentary people of Tidikelt and for their own use in dry years.

[262] The Sudanese trade constitutes the great stabilizing factor in the economy of pastoral Tuareg of Ahaggar. In return for the valuable rock-salt, pastoral Tuareg obtain the bulk of their agricultural food products (millet), butter and cheese for their own consumption in dry years, many important artefacts and notably their camel saddles and their millet mortars. They also get a surplus of millet and goods for investment in their Ahaggar gardens and for selling to the sedentary people of the Tidikelt oases.

[511] [114] There are certain Tuareg who do not engage in the Sudanese salt trade, notably those living in Ahnet; and these Tuareg nowadays have no irrigated gardens either. They acquire their necessary vegetable food products from Tidikelt (dates) and from Abalessa and Tamanṛaset (wheat). They buy these vegetable products with their surplus of goats, sheep, camels, butter and cheese, and an occasional barbary sheep. In a good year they can meet their needs of food in this way, but it is most difficult for them to subsist in dry years; and it may happen that two dry years come in succession. When I stayed among the Ahnet Tuareg in 1954–55, all camps visited were very short of food, while the Tuareg of the Ahaggar Massif who engage much in the salt trade (the *Dag Ṛali* and the *Aġuh-en-tehlé*) possessed what they needed of wheat, barley, dates, and millet.

[364] [435] 000 To-day there is a rather important market at Tamanṛaset where many Tuareg sell surplus livestock, and where they can also buy cereals and dates. But it is always profitable to sell livestock and meat in the Tidikelt oases where meat, butter and cheese are very expensive articles. Dates are cheap in these oases, European goods and woven blankets are also cheaper than at Tamanṛaset. The trading expedi-

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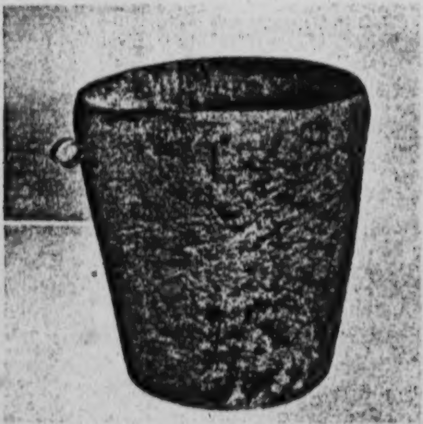

Fig. 150. Wooden measure (*mudu*) which contains one kilo of cereals, or the like. The Tuareg have adopted the kilogramme into their own weight system. The proper Tuareg unit is the *taziwe* which, according to Foucauld, corresponds to three kilogrammes (Foucauld 1951–52, III, p. 1160), but nowadays the Ahaggar Tuareg count one *taziwe* as equal to two kilogrammes and a half. The Tuareg have wooden or metal measures of *taziwe* size, and there are also larger measures to be used for grain, dates, and the like. For units smaller than *mudu* the Tuareg sometimes use a wooden measure called *tanaḳast* which holds half a kilogramme. Smaller quantities are measured with the hand held half open, and it is recognized in Ahaggar that one *taziwe* corresponds to 99 handfuls. In Ayr it is very common to use a little plaited bowl (*téfakemt*) as the smallest unit of measurement. Dimension: 0.140 m high, 0.125 m in diameter at the rim. (F.M. 168).

The trading expedi-
tions have remained important to the Ahaggar Tuareg, and it is clear that they would not go on trading 437
were these expeditions not profitable, for trading expeditions are extremely strenuous. Though the 484
expeditions set off when the extreme heat is decreasing, it is still very hot in the extensive barren plains 461
in autumn and in winter during daytime. Water and pasture are often extremely scarce in this deserted
country, and the Tuareg frequently have to travel rapidly. For days or weeks they live so to say on
their camels, and if camels are not too heavily loaded they may do up to 16 hours a day for several
days in succession. Under such journeys the Tuareg eat only once a day. Obviously such trading [262]
expeditions are also very hard on the pack-camels, and there is always a risk of loosing a camel during
such journeys through barren, desert country.

In this brief outline of caravan trading I have not considered those Ahaggar Tuareg living constantly 433
in the Tamesna plains and adjacent regions. These Tuareg own more livestock than the Tuareg of the 184
Ahaggar Massif, and I do not believe that they engage so much in extensive trading expeditions. [433]
They are comparatively rich in she-camels which are tolerably good milk yielders in these regions [262]
most of the year, and milk is more important as food than it is in Ahaggar. I believe that most Ahaggar [438]
Tuareg of the Tamesna region acquire their necessary vegetable products by selling surplus livestock, [366]
butter and cheese at the markets of Ingal and Agadez.

CARAVAN TRADING OF THE AYR TUAREG

Among the Ayr Tuareg stock-breeding products are far more important for food than in the north. 433
Grazing conditions are better with annual pasture as a recurrent event, and the Tuareg keep bigger 262
flocks of goats and sheep, larger camel herds, and most have a few zebus which are guarded without
much difficulty. The *Kel Ferwan* Tuareg of Southern Ayr can live on milk for a large part of the year,
though they, like those of Ahaggar, become tired of milk drinking if they get no solid food. There are
Tuareg of Southern Ayr who live exclusively on milk for two or three months during the periods of
akasa and *γarat* and to whom milk is important as food for at least six months. In the extremely hot
season of *ėwilen* when milk is very scarce most Tuareg eat millet porridge with a little milk or sauce
(cf. p. 242 f.), and Tuareg who are not very wealthy eat millet porridge to a great extent all the year
round, so that the necessary amount of millet for many camps is about 0.5 kilo a day per person, or
about 180 kilos a year. In Ayr there are fairly good possibilities of collecting if there are not too many [222]
locusts, but most Tuareg do not collect a great quantity of wild seeds, and claim that they would be
very badly off without millet, as seeds of wild plants are not very nourishing in comparison. In one [261]
year during the second world war (in 1943) they say that millet was very hard to get; it was then very
difficult to subsist and a great many animals had to be killed for food. Millet is almost indispensable
to the Tuareg; they also consume other vegetables derived from agriculture, notably wheat, maize,
and dates, but millet is the most essential non-nomadic food product. Normally it can be acquired
by most Ayr Tuareg without much difficulty.

The people of Ayr obtain their provisions of millet from the Sudanese area of shifting cultivation, 439
notably from Damergu (Tanut). Millet can also be bought at Agadez whereto it is brought by Tuareg. 437

439 caravans of the south or by Ayr Tuareg who import more millet than they need for their own use.
437 But millet is cheaper in Damergu than at the Agadez market, and most Tuareg prefer to organize
[435] their own millet caravans with camels and donkeys as pack-animals. In Damergu most Ayr Tuareg
[492] get millet in exchange for livestock or they buy it for money. Their caravans are not always very large,
[476] for the Southern Ayr Tuareg of the *Kel Ferwan* group do not organize their caravans co-operatively
on the basis of kinship. Many individual households fetch their own millet with a few animals, and it
[484] is comparatively easy to do so as the millet growing country of Damergu is not very far away – the
[592] distance from Agadez to Tanut is only about 300 kilometres. The Ayr Tuareg do not have to engage
in extensive trading expeditions to procure millet, and can buy millet very cheaply. A household, it
437 is said, does not have to sell a great many animals to secure the necessary supply of millet. Three or
439 four camel loads will cover the needs of most households, and this amount of millet can be acquired
435 for comparatively few animals – particularly if the animals vended are sheep, which have become
592 very expensive in recent times owing to the rapid increase of Europeans at Agadez. An extremely good
162 sheep or ram for slaughtering can bring in 2000 to 3000 West African francs, and a Tuareg household which buys millet in Damergu will need less than 10,000 francs to acquire the quantity necessary for a year. Thus the Ayr Tuareg can obtain their millet for a few sheep, and there are very few, if any, who do not posses this surplus, and it should be repeated that the increment of livestock is never stopped by drought periods as in the north. The extremely high price for sheep for butchering is a recent phenomena due to the increase of the French population. Fully-grown sheep or rams are expensive, and this is also the case with fowls, while goats are cheap. I believe we can estimate that a household would have to sell about 15 goats anually to obtain the amount of millet necessary for one year's consumption. However, there is little doubt that it has always been quite easy for the Tuareg of Southern Ayr to obtain the requisite amount of millet in exchange for livestock.

262 Millet and milk constitute the basic nourishment of the Ayr Tuareg, but they are very fond of an
[222] occasional change of food. And I believe that this is one important reason why the Ayr Tuareg, like those of Ahaggar, collect wild seeds even in years when grown cereals are abundant. For a change, the Ayr Tuareg are also extremely fond of dates which are not grown to any great extent in their own country. A few Ayr Tuareg own palms yielding dates of poor quality, and I think that a few house-
[439] holds also obtain some dates from Ingal. However, most dates eaten in Ayr are imported from the oasis of Bilma, situated in the very barren desert country between Ayr and Tibesti, about 700 kilometres north-east of Agadez.

437 The trade with Bilma is apparently an ancient one, and its foundation is salt which is of a very bad
439 quality compared with that mined at Amadṛor in the north. The rock-salt of Amadṛor is excellent
[317] for food, and though there is one good quality of Bilma salt that is used for food by the Tuareg of
[263] Ayr, most salt from Bilma contains much soil and other impurities. This impure salt is excellent for
[233] domestic animals which, in Ayr and further south where salt pastures do not exist, need a lot of salt. The Ayr Tuareg, and particularly those who do not visit the country of Azaouaṛ at the end of the rains, need salt not only for their own food but also for their domestic animals. They obtain this from Bilma, which is visited by caravans in autumn or in the early winter. The inhabitants of Bilma, like other oases-dwellers, are in constant need of cereals and meat, and these products are imported

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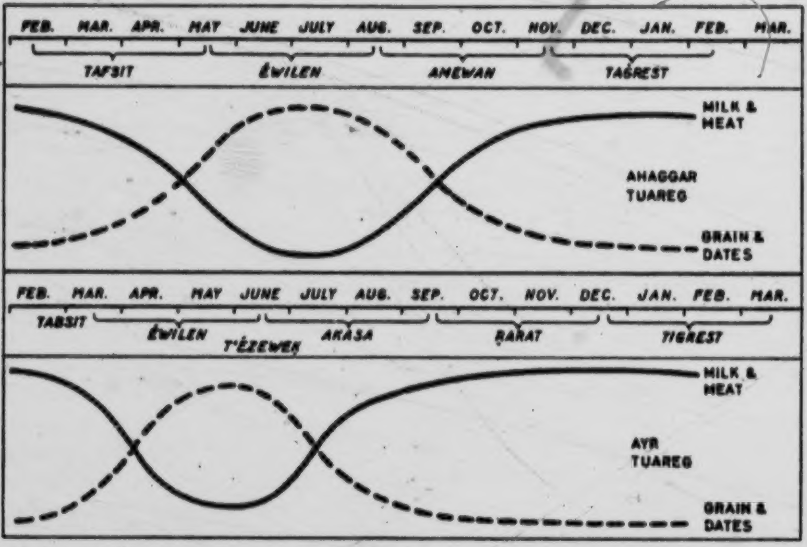

[511] [824] Fig. 151. The relative importance throughout the year of food derived from stock-breeding and vegetable products mainly comprising agricultural products. The curves describe conditions in good years for wealthy families. However, milk (and meat) is less important to most Ayr families than indicated in the diagram which covers a household making use of the particular type of annual pasture which remains green throughout winter, notably *alwat* (*Schouwia purpurea ssp. Schimperi*) *adreylal* (*Astragalus Vogelii*), and *tagellet* (*Colocynthis vulgaris*). – This diagram should be compared with Fig. 14 where climatic and botanical changes throughout the year are outlined.

433 it is remunerative to buy an extra supply of millet in Damergu and to exchange it for dates and salt
439 at Bilma. Caravan trading is a source of profit to the Ayr Tuareg, but most of them ultimately acquire
their agricultural food products in exchange for stock and stock-breeding products. Very few of them
mine salt at Amadror, and most of them obtain salt in return for millet bought for domestic animals
in Damergu, or for meat of domestic animals butchered in Ayr. The Tuareg cannot easily subsist
without agricultural products but they can obtain them in exchange for their livestock.

233 We see again that conditions of stock-breeding are very favourable in Ayr in comparison with those
166 of Ahaggar and in Tasilé-n-Ajjer, where frequent drought periods make it difficult for the Tuareg to
[184] exist. It is easily understandable that the favourable grazing conditions of Ayr have caused many
Tuareg of the north to migrate southwards. These migrations take place even to-day and have gone
433 on for centuries (cf. p. 411 ff.). However, even in Ayr it is most difficult to subsist without cultivated
262 cereals (millet), and we must do away with the myth that pastoralists of North Africa live entirely
on milk and meat from their animals – they do not. This is true for all Tuareg I have visited, including

those of Tasilé-n-Ajjer and the *Kel Geres*. I have been informed by *Iwllemmeden* Tuareg of the *Kel* 433 *Dennek* group, whom I met in Ayr, that they live on millet to much the same extent as the Ayr Tuareg, 262 and that some of them have gardens cultivated by negroid agriculturists. For the *Kel Dennek* it is expressively stated by Nicolas that they cannot live on milk, that they kill comparatively few of their animals, and that they largely live on cereals obtained not only by collecting. Some of the Tuareg mentioned by Nicolas are described as semi-nomads (Nicolas 1950a, p. 145 ff.). Among the Southern Tuareg living further west in the Sudanese savannahs (the *Iwllemmeden Kel Ataram*), agricultural products are very important to the pastoralists who may possess gardens along the banks of the Niger, these gardens being cultivated by the *Bélla* (Aymard 1911, p. 117; Miner 1953, p. 60 ff.).

Nowadays there are no Tuareg who subsist without agricultural products, a few of them (the *Kel* [178] *Ajjer*) practise a primitive type of agriculture in the river valleys, and within all groups there seem to be Tuareg who have turned to irrigation farming as their most important occupation. In the following section I discuss briefly the subject of Tuareg economy in the past.

TUAREG ECONOMY IN THE PAST

Tuareg culture was not profoundly altered by the advent of European military administration around 178 the beginning of the present century. Their traditional material culture has persisted largely unchanged 648 up to the present day. The major change has been the abolition of warfare and consequently the breakdown of the traditional political system, but the abolition of warfare also led to important changes in the organization of caravan trading.

Raiding expeditions were carried out in some Tuareg groups even after the arrival of the Europeans, 175 who established small garrisons in the oases and had camel patrols roaming the country as they have 721 nowadays. Buchanan thus describes a raid carried out by Ahaggar Tuareg against the Ayr village of 648 Timia in the year 1920 (Buchanan 1921, p. 207 ff.), and raids have not been entirely unknown in Ayr even later, though the raiders have then been severely handicapped by the establishment of the French wireless stations which enabled the camel patrols of different areas to communicate with each other (Rodd 1926a, p. 188). Raiding have nowadays stopped, but before the European penetration and conquest it was so to speak an industry to be mentioned with other subsistence activities.

The Ahaggar Tuareg were known as prominent raiders and warriors in the past. The two dominent 175 chiefdoms within the group of Ahaggar Tuareg, the *Kel Ṛela* and the *Taytoḳ*, frequently raided the 721 *Iwllemmeden* Tuareg and the Arabs living north of Timbuktu, as these southern pastoralists were very rich in livestock and in slaves. Some of these Tuareg and Arabs even paid fixed dues to chiefs of the *Kel Ṛela* and the *Taytoḳ* in order that they should not be raided by Tuareg of these groups. However, these annual payments did not safeguard against raiding (cf. p. 401 f.). It seems as if the south-bound raiding expeditions were mainly profitable to the Ahaggar Tuareg, who could not so easily be raided in return by the Southern Tuareg. The Ahaggar Tuareg also raided other neighbouring pastoralists such as the Tuareg of Tasilé-n-Ajjer, and the powerful Arab tribe *Ulad Ba Ḥammu* with whom they had frequent and very serious quarrels; these people raided the Ahaggar Tuareg in return. It can be

7.

Food Preparation

It is natural to open this chapter on food preparation with a description of the use of milk (*akh*) among 234
pastoral Tuareg. The milk which serves as nourishment for the Tuareg derives from goats, sheep, 262
cows, and camels. Milk of all these animals is frequently drunk fresh without any preparation, and this is generally the case with camel's milk, which is not fitted for churning butter or for the manufacture of cheese (cf. p. 63). Milk of goats, sheep, and cows is used for butter and cheese, and is added to various dishes to be described below.

Fresh milk, which is known to the Ahaggar Tuareg as *akh kefayen*, is sometimes heated by means 252
of hot stones (*idaren* in Ahaggar; no particular name in Ayr). The stones heated are then put directly into the wooden milking bowl. The Tuareg practise this method mainly in winter as they do not like to drink cold milk, but milk is heated all the year round in this way with milk of animals which have just brought forth kids, lambs, or calves including camel calves. The milk taken from a mother animal until about twenty four hours after the birth of kids, lambs, or calves is known to the Tuareg of Ahaggar and Ayr as *éderes*. It is very rich and when it is heated by means of hot stones it becomes very thick forming almost a kind of cheese which is highly esteemed by the nomads. The milk of sheep and goats is considered *éderes* for two days after the birth of kids and lambs, though this term should properly be applied only to milk taken the first day after birth. The main reason for using hot stones for milk heating is said to be that milk does not get dirty in this way as it does if heated in earthenware pots over the fire (cf. p. 126).

262

Sour milk (*selay* in Ayr) is consumed mainly by the Ayr Tuareg, who conserve it in skin bags and [251]
especially in calabashes, for which reason this sour milk is also known to the Ayr Tuareg as *akh n* [415]*
ezenu, that is "calabash milk". The milk is often left about twenty four hours for souring, and it is [252]
then placed in a very cool place in order that it may not turn into junket which is not eaten by the Tuareg.

Both in Ayr and in Ahaggar the Tuareg may add water to fresh milk (cf. p. 126), and the Northern Tuareg also add water to buttermilk (*akh n agiwir*). This mixture of water and butter-milk is in high [484]
esteem among the Northern Tuareg, and camel riders frequently carry it with them in a special skin-bag, [415]*
known as *tasufra* (Fig. 155), attached to the riding saddle. Butter-milk cannot be transported in this way if water is not added, for the milk, though already once churned, will become butter during the camel's march. The Ayr Tuareg do not drink butter-milk which is given to domestic animals, for this beverage is so appreciated by the Northern Tuareg that some of them will not drink fresh milk unless butter-milk has been added, a mixture known as *ugerengefa*, *akh imsayen*, or *unsey*.

[p. 221]

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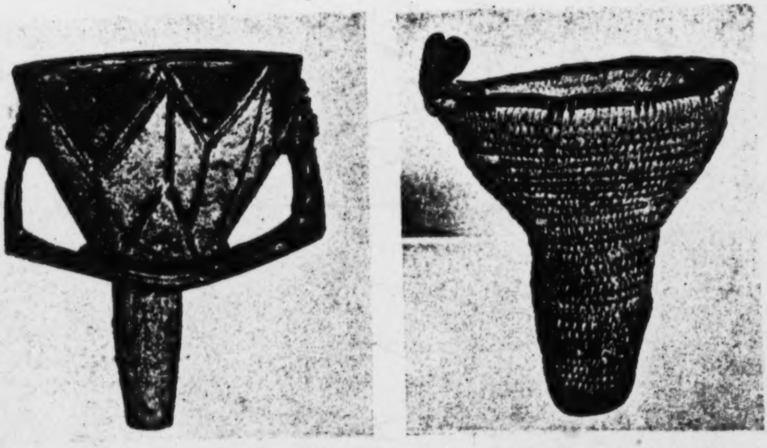

Fig. 153a–b. Tuareg funnels (*ássegeř*, pl. *issegefa*) which are used for milk, butter, and for other liquids.

a. Wooden funnel ornamented by burning. Made by blacksmiths. Ahaggar, the *Dag Ɍali* tribe. Dimension: 0.210 m high. (F.M. 240).

b. Funnel plaited from straw of *taleggit* (*Juncus maritimus*) with the rim reinforced with leather. Made by Tuareg woman. Ahaggar, the *Dag Ɍali* tribe. Dimension: 0.135 m high. (F.M. 243).

234 *415 In Ahaggar the method of churning butter is as follows:— Milk of the morning yield is put into a skin bag (*émesesley*) (Figs. 156–157) to remain in this bag until next morning when churning takes place. During the hot season the *émesesley*, filled with milk, is placed in the shade of the tent in daytime, while in winter it is placed in sunshine, or close to the fire. Some milk of the evening yield is sometimes added to the morning milk in the *émesesley*. Before churning the milk thus soured is poured into the proper churning bag (*ağiwir*, *tamwart*) which is inflated and shaken. Churning bags may vary in size; when there is little milk to be churned a little bag is used and shaking is done holding it in the hands (Fig. 158). When milk is very plentiful, butter is sometimes churned in larger bags (*anwar*), which at one end is attached to a pole, while shaking is done by pulling the other end of the bag with one or both hands. When the milk is shaken in this way it forms small white balls of butter which [412] are removed from the churning bag with a wooden spoon (Fig. 191) when water has been added. This [262] white butter (*udi wa mellen*, or *tesendut*) is occasionally used for food without further preparation, [824] but this is not normal, for newly-churned butter is generally put into an earthen pot (*téṛirt*, or *ufrun*) (Figs. 186, 187a–b) together with parts of an annual plant known as *aynesnis* (*Chlamydophora pubescens*) (Fig. 160) to be heated over the fire. Some Tuareg also add meal of dried dates, or of horns of barbary 251 sheep. After heating, butter (*udi*) assumes a dark yellow colour. It is stored in containers made of *415 camel's hide (*tahattint*, *asagen*, *aṛafiha*) (Figs. 161–162), or in Sudanese calabashes (*azenu*) (Figs. [326] 163a–b). A particular metal pail (*éṛir*) (Fig. 164) manufactured by native blacksmiths is also used for butter in Ahaggar,

butter in Ahaggar, and butter reserved for greasing the hair is frequently kept in a large horn (*isek*) 251 415*
of barbary sheep (Fig. 165). [302]

The Ayr Tuareg make butter (*wiji*) in much the same way as the Northern Tuareg. For churning 234
they use a skin bag (*anwar*), or a calabash (*azenu*), and they say that they prefer skin bags in winter, [415]*
and calabashes in the hot season. Butter is heated or boiled immediately after churning, but the Ayr
Tuareg do not add parts of plants, date flour, or the like. In Ayr butter is not churned as regularly as
in the north. It is used mainly for cooking meat of thin animals, for a sauce which may be used [252]
for millet porridge instead of milk (cf. p. 243 f.), and for greasing the hair. Among the Northern Tuareg [302]
butter is added to many different dishes and particularly to bread, which is eaten almost daily by many [262] ●
people. In years of drought the Ahaggar Tuareg get their butter from Ayr (cf. p. 212, 215), and the [438]
Ayr Tuareg make much butter for export in such circumstances. They churn most butter from cow's

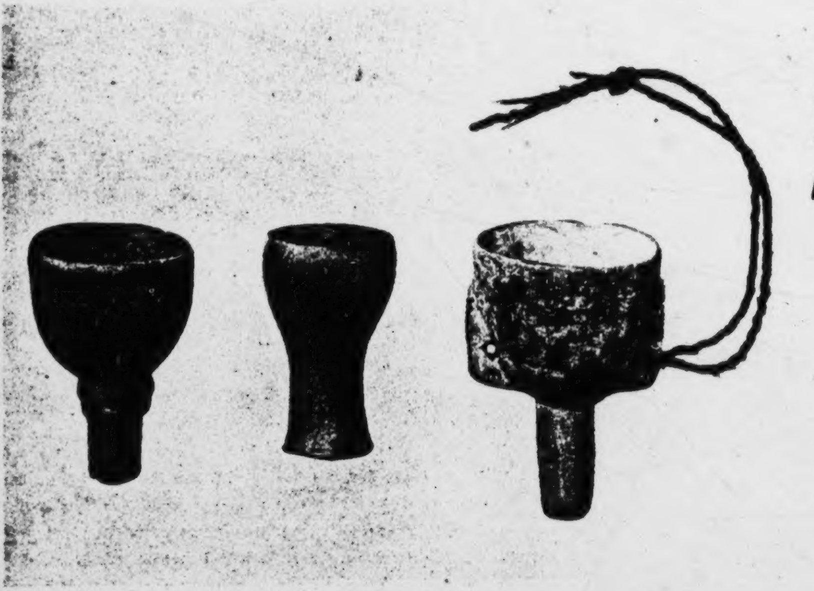

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Fig. 154a–c.

a. Wooden funnel. Made by blacksmiths. Ahaggar, the *Dag Ɣali* tribe. Dimension: 0.146 m high. (N.M. G. 5203).

b. Funnel consisting of a piece of calabash which derives from the south. Ahaggar, the *Dag Ɣali* tribe. Dimension: 0.131 m high. (N.M. G. 5202).

c. Wooden funnel with a strap of cord of goat's hair. Made by blacksmiths. Ahaggar, Olufsen's collection. Dimension: 0.175 m high. (N.M. G. 1.150).

All wooden funnels are cut from wood of the *taberekkat* tamarisk (*Tamarix aphylla*). [824]

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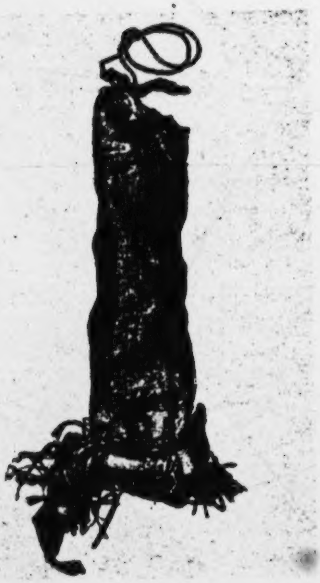

Fig. 155. Skin bag (*tazajre*) for the conservation of butter-milk on journeys. The bag is made from an entire goat-skin and has a handle of goat-hair cord tied to the skin patches of the hind legs. A leather handle is attached to the lower part of the bag which is ornamented with leather fringes. Ahaggar, the *Afuh-en-tehlé* tribe. Dimension: 0.77 m long without the fringes. (F.M. 89).

They[2] churn most butter from cow's

234 [262] milk, and this butter is not considered as delicious by the Ahaggar Tuareg as their own butter, churned mainly from goat's milk. – The use of wooden churning sticks by means of which milk is stirred in
234 an open container is unknown in Ahaggar and Ayr, so far as I know. Churning sticks are used in
412 other Tuareg groups. They are common among the Tuareg of Adṛaṛ-n-Foṛas (Musée d'Ethonographie, Neuchâtel, no. 49.2.44 & Musée de l'homme, Paris, no. 38.16.48) and among the *Iwllemmeden*
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171 Tuareg and the Fulani (Musée de l'homme, Paris, nos. 41.19.411 & 41.19.1326).

234 All Northern Tuareg, as well as the Northern Arab pastoralists and semi-nomadic Berbers and
[171] Arabs of the Atlas, make cheese from butter-milk, while this type of cheese is unknown among the
[184] Southern Tuareg and also among the Fulani. In Ahaggar butter-milk cheese (*awles*) is manufactured
[462] by women in the following manner:— Butter-milk is heated over the fire in an earthen pot (*téṛirt*, or *ufrun*)
*[415] (Figs. 186, 187a–b) by which process the milk is divided into two parts, namely pure water and a curdled mass of milk (*akru*). This mass of curdled milk is placed in a special basket (*aragus*) (Figs. 167a–b) hanging from a tree or a similar object to sort out the whey. Thus there remains a mass of cheese in the basket, and this mass is formed into small round pieces to be left for drying. Butter-milk cheese is manufactured in this way by all Northern Tuareg who are thus able to obtain butter and cheese from the same milk.

234 Another type of cheese is made from fresh milk and is manufactured not only by the Northern
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[2] [ie. the Ayr Tuareg -- Analyst]

Tuareg but also by the southern groups and by Arab pastoralists of the Sahara; it is also known in 234
the Atlas, and is on the whole widely distributed in Northern Africa. This type of cheese is known to [171]
the Northern Tuareg as *takammart* and it is manufactured as follows:— Fresh milk is heated and [415]*
then poured into a large wooden bowl (e.g., *tạrehut*) (Figs. 195a–b). The milk is curdled into a mass
of cheese by means of a rennet (*akammar*) consisting of the abomasum of kids that have never tasted
anything but milk. The curdled mass of cheese is pressed with the hands and with a piece of straw- [285]
mat (*éseber*) in order that the liquids may separate. The mass of cheese is formed into small rectangular
pieces of cheese which are left on the little straw-mat for about one day. They are then removed to [417]
be dried finally on a platform (*tahaġa*, *tafalkat*) made of branches.

Cheese made from fresh milk is known to the Ayr Tuareg as *tekemmart*; it is manufactured to very
great extent and much in the same fashion as just described from Ahaggar. The abomasum of little [824]
kids or lambs to be used for rennet is named *tedeṛant*, and the Ayr Tuareg add parts of an annual
plant known as *ekochmaren* (*Caralluma Mouretii*) in order that the milk may curdle quickly. The [285]
Ayr Tuareg also use little mats plaited from stems of the *afezu* grass (*Panicum turgidum*) to press and
form the rectangular pieces of cheese; the Ayr Tuareg make mats (*tésebert*) (Fig. 168) particularly
for this purpose, while the Ahaggar Tuareg generally use an old piece of a tent mat (*éseber*). In Ayr
the rectangular pieces of cheese are dried on bunches of hay placed in trees (acacias), or on the top
of the mat-covered tents.

The *takammart* or *tekemmart* type of cheese made from fresh milk is in high esteem as food among 212 ●
all pastoralists of the Sahara. It is generally eaten when newly-made and soft, though it may also be 251
stored. The Ahaggar Tuareg make this type of cheese only when milk is plentiful, while the Ayr Tuareg 234
manufacture it most of the year though the main season of cheese-making is the season of *akasa*. 221

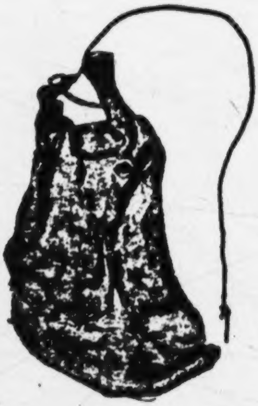

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Fig. 156. Skin bag of the *ămesesley* type used to sour milk before churning. Ahaggar, the *Ağuh-en-tehlé* tribe. Dimension: 0.37 m high. (F.M. 170).

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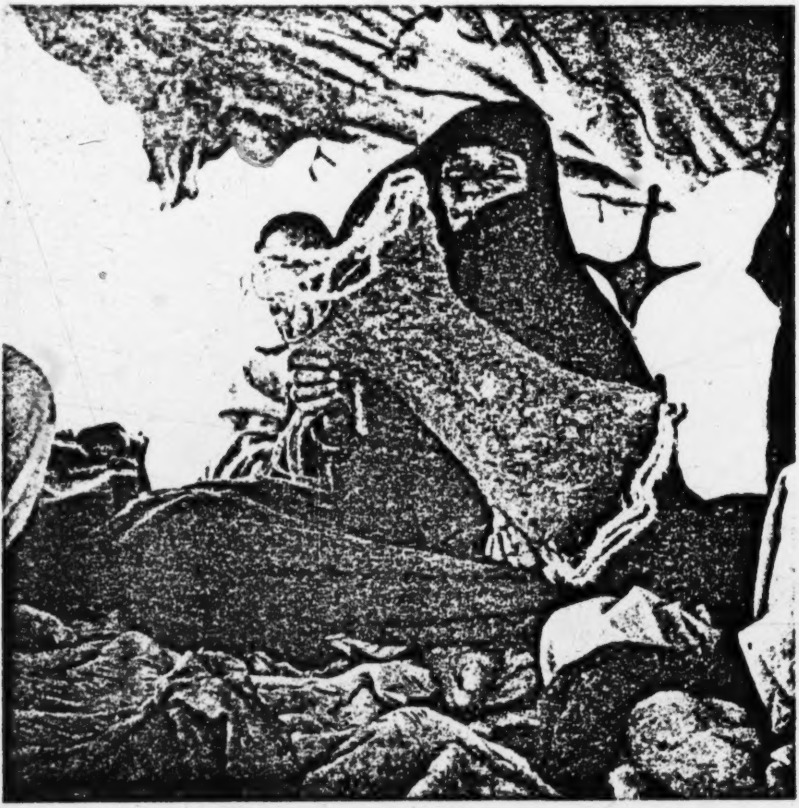

Fig. 158. Woman churning butter by shaking the inflated churning-bag (*ağiwir*) between her hands. Ahaggar, the *Ağuh-en-tehlé* tribe.

Meat (*isan*) is not a staple diet of the Tuareg. The Tuareg of Ayr consume more meat than the 262 Northern Tuareg, but even in the south it is not eaten daily. There are Ayr Tuareg who are reluctant to kill their animals, and people who have much milk have very little need of meat. Meat is eaten by [574] all Tuareg on certain festive occasions, whether social or (and) religious, and when camps are visited by friends, certain relatives, and important guests. He-goats and rams, or barren goats and sheep, [231] are the animals most commonly killed. The meat of sheep and rams is considered better than goat [282] meat, and sheep are also highly esteemed for sacrifice. Whenever the Tuareg kill an animal for food 000

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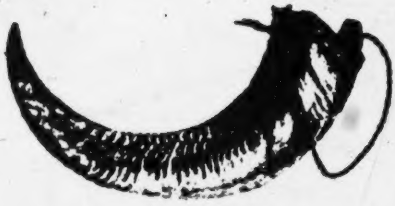

Fig. 165. Horn (*isek*) of barbary sheep used for storing butter for greasing the hair. The opening is closed with a piece of date palm bast (*asan*), and the edge is pierced with a glowing awl (*éndel*) for the insertion of a cord of goat's hair by means of which the horn is attached to the tent ceiling. Ahaggar, the *Dag Ɣali* tribe. Dimension: 0.30 m long. (F.M. 236).

252 the Tuareg in the past. I believe that they were made by blacksmiths or imported from the north.
*415 Pastoral Tuareg do not manufacture earthen pots which are obtained from sedentary people. The
[322] cooking of meat is perhaps not a traditional method of food preparation to the Tuareg, though they
seem to have used cooking pots for centuries.

252 A method of meat preparation undoubtedly introduced recently among the Tuareg, is that of spit
177 roasting. Meat roasted in this way is known as *mechwi*, a word of Arab origin, and the Northern
Tuareg have taken over the method from the Arabs. The *mechwi* method is also known in Ayr, where
it has perhaps been introduced by French administrators who had learned to appreciate meat thus
252 prepared during their visits among Northern Tuareg and Arabs. Pieces of sheep and goats and entire
animals are prepared in this way (Fig. 174), and the meat should preferably be prepared with
butter and red pepper before roasting.

The traditional Tuareg roasting method is to place entire animals (goats, sheep), or parts of them, under the hot ashes of the fire. This method is known to the Northern Tuareg as *abatul*, to the Tuareg of Ayr as *ébewil* (Fig. 175). This method of roasting meat is practised everywhere among the Tuareg, and it is on the whole similar to the method used for bread-baking described below (p. 238 f.).

Meat-roasting in the ashes is no doubt an ancient Tuareg method of food-preparation, and this also holds good for another method described in connection with the preparation of milk, namely food preparation by means of hot stones (cf. p. 221). The Ahaggar Tuareg prepare the stomachs of goats, sheep, and barbary sheep in this way, putting hot stones into the stomachs, while camel stomachs are boiled in a cooking pot and gazelle stomachs roasted in the ashes according to the *abatul* method mentioned above. These rules of food preparation seem also to be practised by the Ayr Tuareg, who put hot stones into stomachs of sheep and goats together with small pieces of meat. A stomach of goats or sheep prepared in this way, however, is given a final treatment in hot sand or in ashes close to the fire. The stomach of sheep or goats cooked with hot stones is known as *taṛafa*, and a related word seems to be known also in Ahaggar (cf. Foucauld 1951–52, IV, p. 1583).

● [262] The Tuareg eat most entrails of their slaughtered animals. Entrails of camels are normally boiled, and kidneys of all animals are prepared in this way. Most entrails of goats and sheep (liver, heart, and lungs) are roasted on the embers or in the ashes, and in Ayr the Tuareg roast fat put into the abomasum (*tedeṛant*). The Northern Tuareg generally prepare liver and fat together in the following manner:— The liver is roasted upon the embers, is thereupon cut into small pieces which are wrapped up with small strips of fat. The pieces of liver covered with fat are put on a slender iron or wooden rod to be roasted slightly over the fire. This dish is known to all Tuareg by the Arabic word *elmefif*. It was introduced among the Northern Tuareg by the Arabs, but is not widely known among the Ayr Tuareg. 252 [177]

This brief description of Tuareg meat preparation can adequately be supplemented by a reference to two peculiar dishes:— (1) A dish known to the Ahaggar Tuareg as *talebeggat*. It consists of meat which after boiling or roasting is pounded in a large mortar and frequently served with liquid butter. This dish is also known to the Ayr Tuareg. (2) A dish which is described from Ahaggar by Foucauld under the name *abangor*. It consists of untanned skin which is eaten in case of hunger after the following preparation:— Untanned skin from household implements, shields, and the like is roasted under the ashes, and is thereupon pounded into small pieces. These are eaten without any further preparation, or after boiling. (Foucauld 1951–52, I, p. 73). 252 262 252 261

Like other North African peoples the Tuareg dry meat of domestic animals and of game. The people of Ayr know three distinct drying methods, namely (1) *iwesan*, that is meat which is boiled until it is free of blood; it is dried in the shade; (2) *tikelsin*, uncooked meat cut into pieces to be dried on a string in the shade; (3) *kules*, uncooked meat cut into strips which are dried for some time to be treated with salt and various spices. This last method is not practised among the Tuareg of Ayr, but by sedentary people of Agadez and by Negroes further south in Damergu. The Ahaggar Tuareg generally boil or roast the meat before drying; meat roasted in the ashes according to the *abatul* method and thereupon dried is known as *takasa*. I do not know whether the Ahaggar Tuareg also practise the method of drying raw meat like the Ayr Tuareg, but the dried *agezzeram* lizzards which they take to Tidikelt on trading expeditions, are dried uncooked. Furthermore, the method of drying raw meat is known elsewhere in the Northern Sahara, and I have myself seen it practised among the Berber-speaking *Chawiya* of Aurès. 251 [825] [171]

I conclude the description of Tuareg meat preparation with a brief note on the use of blood of living 272

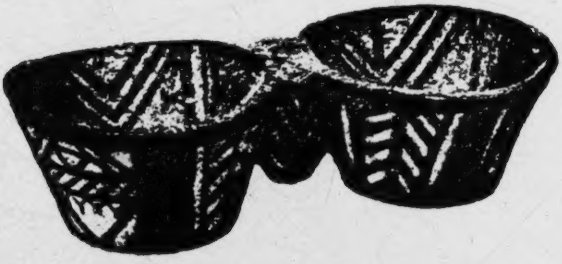

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Fig. 166. Wooden double-vessel (*azar*) to contain water and butter for greasing the hair. Similar containers with a third vessel for fine-grained sand are also found among the Tuareg. Made by blacksmith from wood of the *taburak* tree (*Balanites aegyptiaca*). Geometrical ornaments are produced by burning with a hot iron. Ahaggar, *Ahl Azzi* Arabs at Tamanrasset. Dimension: 0.241 m long. (N.M. G. 5880).

[text continues on p. 235]

camels. This blood never constitutes a proper dish to the Tuareg. They bleed camels to drink their 272
blood only when they lack water on journeys in the desert. Bleeding is done according to the method [277]
described above, and the blood is collected in a drinking bowl. But the Ayr Tuareg say that they work up the mass of blood with the fingers with the result that the upper part of the amount of blood becomes more liquid, though it is always red in colour.

The Tuareg use the following implements to make cereals or other vegetable products into flour:— 412

(1) A large wooden mortar (*tindé*) with a heavy pestle (*éheṛen*) (Fig. 177). It is used in all camps 252
and villages of Ahaggar, Tasilé-n-Ajjer, and Ayr, and is in fact known all over Tuareg country. It is used mainly for pounding millet and sorghum, but it is also employed for pounding other cereals, including certain wild seeds, and for dates, cheese, meat, locusts, and the like. These large wooden [564]
mortars are manufactured by the blacksmiths of Southern Tuareg country, including Ayr, where [238]
most Northern Tuareg obtain their mortars. Among the Northern Tuareg there are also other mortar types. A small mortar which like the former rests on a foot and is known by the same name (*tindé*) (Fig. 178), is used mainly by sedentary agriculturists for pounding rock-salt, dried tomatoes, tobacco for chewing, and other plants or materials to be used in small quantities. Another type of mortar without a foot and known to the Northern Tuareg as *akabar*, or *takabart*, (Fig. 176) is found mainly among pastoralists who use it on journeys for pounding millet.

(2) A saddle quern (*tehunt*) (Fig. 179), which consists of two natural and in general unfashioned stones, is found in most camps of the Northern Tuareg. This constitutes the only grinding implement for wheat, barley, and certain wild seeds among the *Kel Ajjer*. The stones used for saddle querns are [324]
sharpened at intervals with a hard stone or some other hard object (*tasettekut*) in order that they may grind effectively. A simple saddle quern (*asar*) is also known to the Ayr Tuareg, but it is less common there than in the north.

(3) The handmill (*tasirt*) (Fig. 181) is not a traditional implement of Tuareg culture. It is widely [171]
known all over Northern Africa both by Berbers and Arabs, by sedentary peoples and nomads living in black tents. It has been introduced to Ahaggar mainly by the immigration of the Arabic speaking [167]
Harratin (Izeggaren) of Tidikelt,

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Fig. 169a–c. Pieces of butter-milk cheese (*awles*, pl. *iwlsan*).
a. Ahaggar, *Ḥarratin* of Abalessa. Dimension: 0.066–0.068 m in diameter, 0.022 m thick. (N.M. G. 5816).
b. Ahaggar, the *Aguh-en-tehle* tribe. Dimension: 0.062 × 0.022 m. (N.M. G. 5817b).
c. Ahaggar, the *Aguh-en-tehle* tribe. Dimension: 0.058 × 0.016 m. (N.M. G. 5817c).

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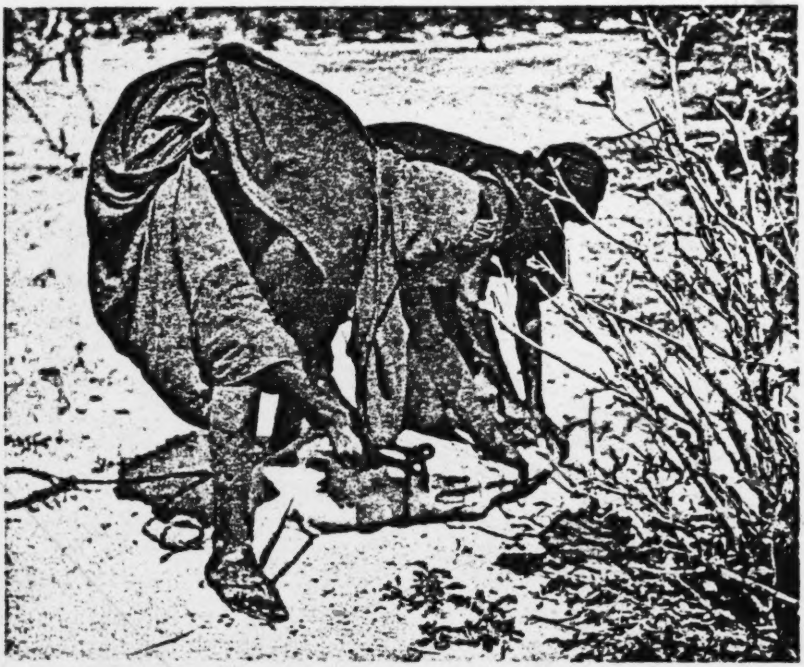

Fig. 170. Sacrificing a goat at the naming ceremony called *isnawen*. A marabut and the child's father keep the animal firmly to the ground. They stand with their faces towards Mekka and the camp of the new-born child. The marabut cuts the animal's throat simultaneously crying out loudly the child's name which is thereupon loudly repeated by the father. Ayr, the *Igendéynen* tribe.

412 252 *Ḥarratin* (*Iẓeggaṛen*) of Tidikelt, and it is now also found in Tuareg camps (Fig. 182), where it is less frequent than the above-mentioned saddle quern. The handmill was entirely unknown among the Ajjer Tuareg during my visit to Tasilé-n-Ajjer in 1952. The Tuareg who possess handmills obtain them from the sedentary agriculturists of Ahaggar (Tamanṛaset). – When saddle querns or handmills are used, a piece of cotton or skin (*asentel* in Ahaggar) is always placed under the grinding stones to catch the flour (Figs. 180, 182).

●262 The Tuareg have many different vegetable dishes. The most important are bread, porridge, gruel, and various mixed beverages.

[252] Bread is a prominent dish for all Northern Tuareg who bake it mainly from wheat flour. Wheat bread has been my ordinary dish among all Tuareg of Ahaggar and Tasilé-n-Ajjer. Lhote states that

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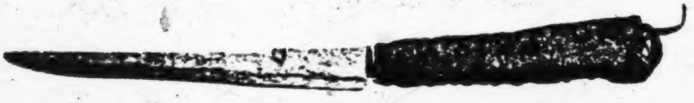

Fig. 171. Ordinary meat-knife (*elmusi*) of the type used among Northern Tuareg and Arabs. Its broken handle is mended with hide of barbary sheep sewn with leather thread. Ahaggar, the *Dag Ṛali* tribe. Dimension: 0.28 m (total length). (F.M. 249).
All knives are manufactured by blacksmiths.

wheat bread is eaten particularly during migrations and on trading expeditions, or in periods when 262
butter is rare (Lhote 1955a, p. 262). This statement disagrees with my own experience. Wheat bread [114]
is an ordinary diet of many Northern Tuareg. Bread is also baked from barley and from certain wild [824]
seeds (notably *tawit*, *Chenopodium Vulvaria*; *éhéyefyef*, *Aizoon canariense*; *tullult*, *Aristida pungens*)
and wild roots (*ahahel*, *Cistanche Phelypaea*), while millet and sorghum are considered less suitable
for baking. Seeds are generally prepared for baking by grinding them into flour by saddle querns or 252
handmills. In Northern Tuareg country there are two types of bread which have been introduced as [177]
a result of contact with Arabs or the Arabic-speaking *Ḫarratin*. One type is named *elfetat* and is baked

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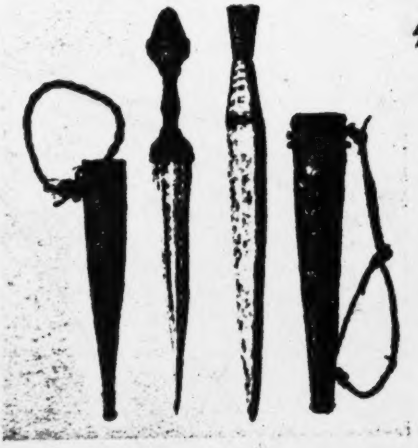

Fig. 172a–b. Meat knives.
a. Knife (*ézegiz*) of Tebu type to be carried in its sheath around the upper arm. These knives are sometimes used in Ayr. Agadez. Dimension: 0.370 m. (total length). (N.M. G. 6620a–b).
b. Knife (*ézegiz*) of the double-edged type normally used in Ayr. The *Imezzureg* tribe. Dimension: 0.377 m (total length). N.M. G. 6665a–b).

into fine-grained sand carried from the river bed to the fire place in front of the tent. When this heavy 252
fire has calmed down the embers and most of the ashes are moved from the shallow depression to its
fringes by means of a small stick, and the thin porridge or gruel of flour and water to which also a
little salt is added is poured out into the depression, a spoon being normally used to remove all the
gruel out of the wooden bowl in which it has been stirred. A bunch of dry grasses, herbs, or tender
twigs is thereupon fired over the gruel in order that its surface may harden, and it is then covered
with hot fine-grained sand, ashes, and embers in the order mentioned. If the embers are considered
insufficient for baking, a small fire may be lit on the top of the sand and ashes covering the gruel-bread,
which is taken out after about twenty minutes to be turned and baked in the same way on the other
side for a few minutes. Baking is then finished, the bread is finally removed to be washed in water
(Fig. 183). It is broken into pieces and eaten from a large wooden bowl (Figs. 195a–b) together with 264 415* 412
liquid butter. It is eaten with wooden spoons (Figs. 191).

The type of bread just mentioned is known to people of the *Kel Ferwan* group as *tugella*. It is made 262 ●
by very few Tuareg. Indeed, when I travelled together with Ayr Tuareg I very frequently baked my 252
own bread as I had learned to from the Tuareg of Ahaggar, because very few of the Ayr Tuareg I [122]
met were familiar with bread baking. Bread is not a staple diet of the Ayr Tuareg, and when they
want to bake wheat flour they generally do so in the following way:— The flour is mixed with water
to a dough which is placed upon the bottom and sides of a metal pot heated over the fire. This type of
bread or bread-like dish is known to the *Kel Ferwan* Tuareg as *gurasa*. It can be mentioned that the
Kel Ferwan Tuareg also bake a particular type of bread from millet flour mixed with certain other 252
plant materials, but a bread of this kind is not baked for ordinary food, but as a kind of medicine. 261

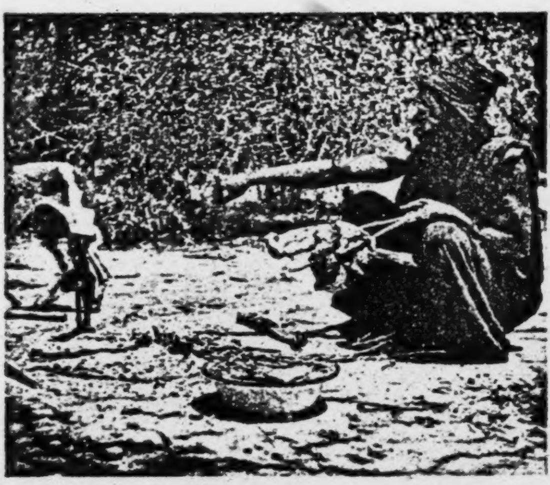

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Fig. 174. Roasting meat-lumps by the *mechwi* method. Ayr, *Echchikhan* Tuareg of Damergu.

[text continues on p. 241]

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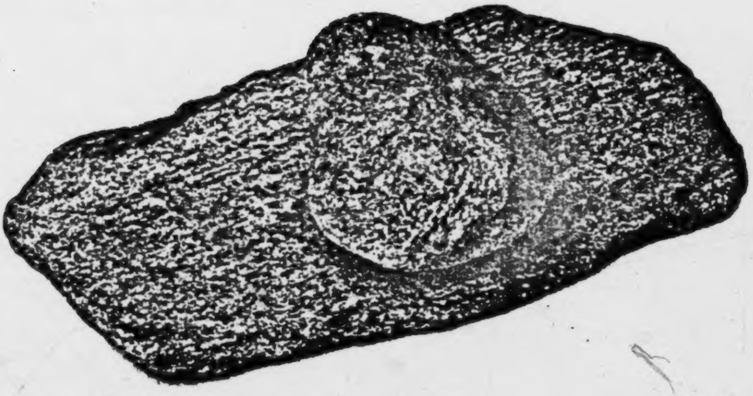

Fig. 179. Simple saddle quern (*tehunt*) of two natural stones: (a) the lower part called *tehunt*, (b) the upper part called *azzed*. It is used for grinding cereals. Ahaggar, the *Aġuh-en-tehlé* tribe. Dimension of the lower stone: 0.360 m long. Dimension of the upper stone: 0.115 m. (N.M. G. 5839a–b).

261 This *ékanef* bread is eaten exclusively by women who claim that it gives them a good appetite and makes them fat.

262 252 Millet porridge is a common dish among the Ahaggar Tuareg, and it constitutes by far the most important vegetable dish to the Ayr Tuareg and the sedentary agriculturists of the south. Millet porridge is known in Ahaggar as *esink*, in Ayr as *echink*. The preparation of millet porridge involves much strenous work as follows:— (1) An amount of millet seeds is poured out into the large wooden mortar (*tindé*, p. 235, fig. 177). A little water is added to the seeds which are then pounded for about *[415] ten minutes. The seeds thus pounded are then poured out into a plaited bowl (*tabeyka*; Fig. 185) or another receptacle to be winnowed. This process is done by shaking the plaited bowl itself, and by pouring small quantities of the pounded seeds from the bowl into a plaited tray (*téseyt*; Fig. 184) which is better fitted for winnowing by shaking. The husks or pods covering the seeds are thus taken away by the wind. (2) When the pounded seeds have been cleaned or winnowed in this way they are replaced in the wooden mortar, and water is again added. The seeds are now heavily pounded for about half an hour, and most of them are turned into flour after this process, but a small amount of seeds remains unpounded. The mixture of flour and unpounded seeds are poured out into the plaited

bowl and the plaited tray just described, and the flour is shaken into the large wooden bowl (*elkada*; 252
Fig. 195b) while the unpounded seeds remain in the plaited receptacles. (3) The small amount of seeds [415]*
which have not yet been turned into flour is put back into the mortar, a little water is again added,
and pounding is resumed for five to ten minutes. Most seeds are now turned into flour which is placed
in the wooden bowl by shaking the plaited receptacles. (4) The seeds which are not yet pounded after
this treatment are replaced in the mortar to be pounded for two or three minutes without the addition
of water. The flour produced is shaken into the wooden bowl. (5) What remains unpounded is replaced
in the mortar to be pounded without water for two or three minutes, and the flour obtained is shaken
into the wooden bowl. (6) The flour is put into the large cooking pot (*éṛir*) which has been boiling
with water during pounding. (7) An extremely small quantity of flour derived from a final pounding
is added to the pot after cooking for about five minutes. (8) During cooking the porridge is stirred [412]
with a wooden stick known to the Ahaggar Tuareg as *aserwi* (Fig. 188).

Millet porridge (*esink*, or *echink*) is of heavy consistency and is normally eaten with milk by means 262
of spoons. But if milk is lacking or is scarce, the Tuareg also add various types of sauces such as the 252
following which is made by many Ayr Tuareg:—Leaves of certain plants (*abezey*, *Cassia tora*; *malokhiya*, [224]
Corchorus tridens; *kuka*, a large tree growing in the Sudan) or seeds of a plant known as *ékabewa*
(*Corchorus olitorius*) are put into a large mortar to be pounded together with onions, dried tomatoes,

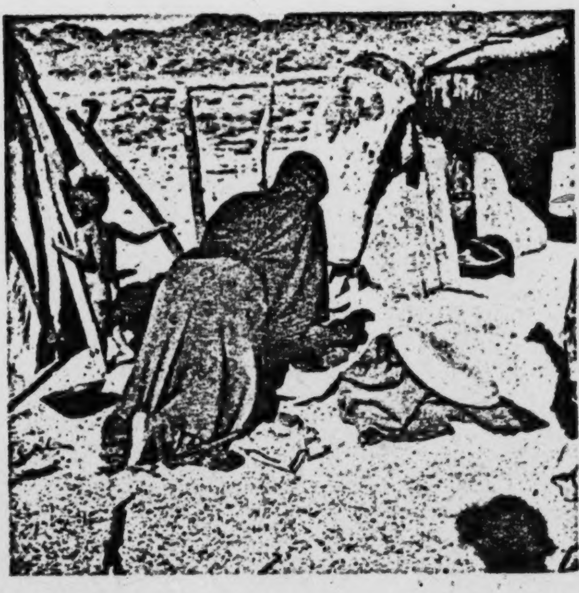

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Fig. 180. Tuareg woman grinding wheat on the simple saddle quern (*tehast*). The saddle quern is placed upon a piece of skin (leather) called *asentel* which receives the flour. Ahaggar, the *Dag Ṛali* tribe.

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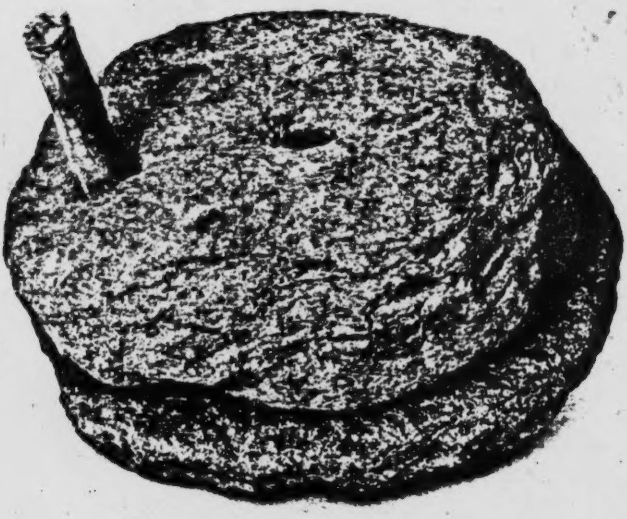

Fig. 181. A hand-mill (*tasirt*) manufactured by blacksmith of Tamanɽaset and used at that village by *Akl Azzi* Arabs. Dimension: 0.52 m in diameter (upper stone), 0.32 m in diameter (lower stone). (N.M. G. 5840a–b).

262 and red pepper which is much esteemed by the Tuareg, but not always available. The pounded flour
252 of these vegetables is boiled with water and butter and thus turned into a kind of thick sauce which is poured out over the porridge to be eaten.

The porridge type known as *esink* or *echink* can be made from other seeds besides millet. Porridge made from barley, which is then also pounded in the mortar, is highly esteemed by the Tuareg who also use various wild seeds and roots for this dish. Plants utilized for porridge are mentioned above in the description of collecting (p. 175 ff.). Porridge is also made from dried dates pounded in the millet mortar; this dish is common among the Northern Tuareg.

The Tuareg have a particular type of porridge which I have never tasted. It is known to the Ayr Tuareg as *baɽela*, and is made from pounded seeds of various cultivated plants (wheat, barley, maize, or millet). The seeds are pounded in the mortar but their husks or pods are not removed by winnowing. Otherwise the preparation of this dish is similar to that of ordinary porridge.

262 The Ahaggar Tuareg distinguish between very thick porridge called *tarawayt* and very thin porridge
P46 or thick gruel known as *aliwa*. The latter dish is known to the Ayr Tuareg by the same name, and

among them it is eaten in particular by women during the first seven days after the birth of a child, 262
that is during the period from birth to the name-giving ceremony known as *ismawen*. It is considered 846
dangerous for a woman to eat too much vegetable food during this period, while meat is believed to
make her recover quickly after birth. The same diet is followed by young boys after their circumcision 262
until their wounds have healed. These dietetic rules no doubt have their root in magical beliefs. 304

All Tuareg esteem liquid or semi-liquid dishes which are consumed mainly during the very hot 262
season. A very common dish of this type is that named *aṛejira* (Ayr) or *aṛehara* (Ahaggar). It is made
from flour of millet, sorghum, dates, and crushed cheese mixed with water, the main substance being
pounded millet. The dish is served in a large wooden bowl or in a calabash, and is eaten and drunk [412]
by means of a large wooden ladle called *tamulat* (Fig. 194a–b). This liquid dish is a substitute for [251]
milk during the hot season when milk is scarce, and it is frequently used for food on journeys, in which
case it is transported in the form of dough-like balls to be dissolved in water just before eating.

The terms *aṛejira* and *aṛehara* are used for various liquid or semi-liquid dishes, or beverages, for
which the Tuareg have particular names according to their composition. Dates are less important
for liquid dishes in Ayr than among the Northern Tuareg to whom dates form an important part of
food. Very important in the north is a dish known as *talekessat*; it is made from dried dates pounded [252]

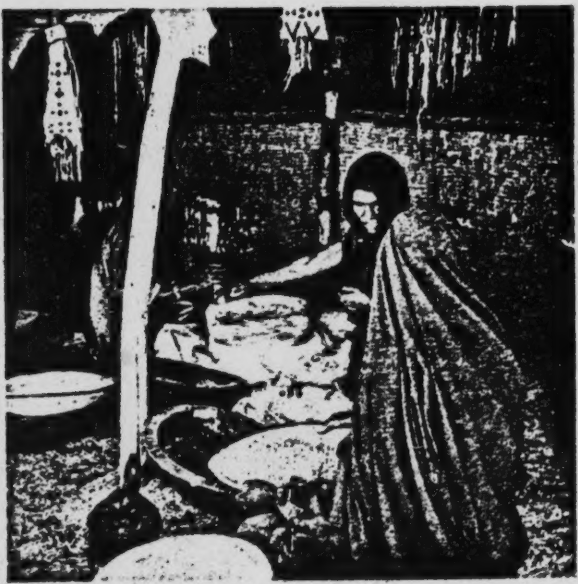

Fig. 182. Tuareg women turning a hand-mill (*tasirt*). In the foreground a woman shaking flour into a wooden bowl. Note the ornamented patches of leather hanging down from the tent sheet. Ahaggar, the *Dag Ṛali* tribe.

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[text continues on p. 247]

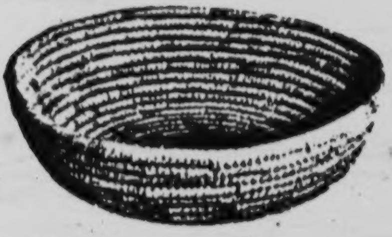

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Fig. 185. Tray or bowl (*tabeyka* – perhaps not correctly spelled). It is used for winnowing, and it serves as an eating bowl and a drinking bowl as this container is watertight. Coiled basketry of date palm leaves (*afum*). Made by Tuareg woman. Ahaggar, the *Dag Ġali* tribe. Dimension: 0.285 m in diameter. (F.M. 263).

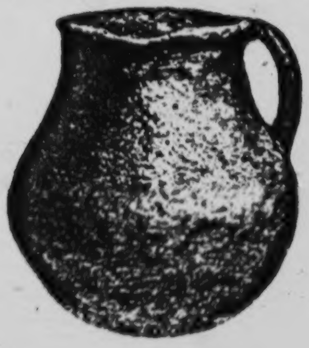

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Fig. 186. Pot (*[illegible]*) with a single handle. Manufactured by *Ḥarratin* women in Ahaggar, the *Ağuh-en-tehlé* tribe. Dimension: 0.18 m high. (F.M. 172).

in a mortar with a little water to a soft dough to which a little cheese, butter, or milk is added before 262
eating. If a large quantity of milk is added this dish is known as *tarkit*. The Ahaggar Tuareg, as men- 252
tioned (p. 167), also pound dried dates with locusts to make a dish eaten by women who wish to grow fat. [261]

The Arabs and the Arabic-speaking agriculturists of Tidikelt (the *Ḥarratin*) have introduced among 262
the Northern Tuareg the well-known North African dish generally called kuskus. The dish is known [172]
to the Tuareg as *keskesu* which is also Arabic by origin. But this dish is not the staple diet among [171]
the Northern Tuareg that it is among the Arabs and the Berbers of the Atlas. It is eaten mainly on
festive occasions, and there are many Tuareg women who even to-day do not know how to prepare it.
The *keskesu* dish is preferably made from wheat flour, though barley flour may also be used. The 252
cereals are ground with hand-mills or quern stones (saddle querns), and the flour is rolled into very

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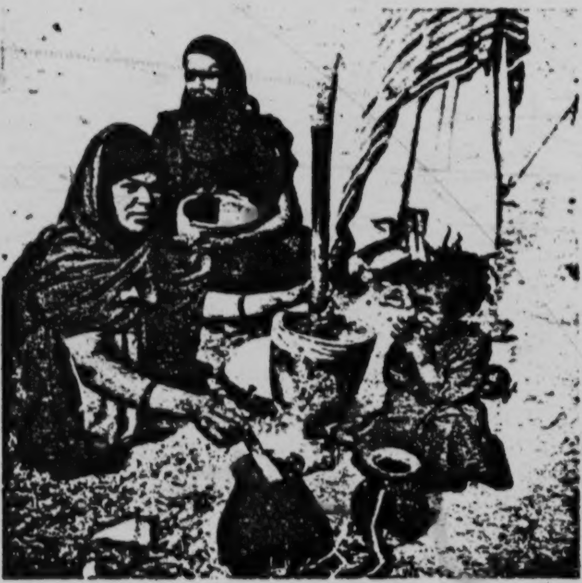

Fig. 192. Tuareg woman cooking millet porridge. Ahaggar, the *Aguh-en-tehlé* tribe. The cooking pots seen on this photograph are bought in the Sudan on trading expeditions. Sudanese pots are superior to those made in Ahaggar.

Like
264 most Tuareg dishes they are eaten from a large wooden bowl. If meat is cooked with the soup it may
be broken into small pieces to be eaten with the balls, but part of the meat cooked is always eaten
separately. The Tuareg eat *keskesu* with spoons, but if spoons are lacking they also eat it with the
● 262 hand, as do the Arabs. In addition to *keskesu* with its small balls which resemble grains of rice, the
Northern Tuareg have another dish prepared in the same way but with larger balls. It is termed
[189] *tikhemmezin* and is considered inferior to the *keskesu*. – Both these dishes are unknown to the Ayr
Tuareg of the *Kel Ferwan* group.

262 Two particular dishes are mentioned from Ahaggar by Foucauld. One of them is called *ibergan*
252 and consists of unripe barley boiled in its own juice without water. The other one is known as *abezbez*
[261] and is made from tender plants of wheat and barley which are dried and pounded or ground into
powder, to be eaten, boiled or unboiled, in periods of famine (Foucauld 1951–52, I, p. 89, 118).

Tuareg vegetable dishes are frequently prepared in a very simple way. Thus there is a dish known as *tues* (Ahaggar) or *tewes* (Ayr) which consists of entire seeds of millet or sorghum boiled in water. It is eaten mainly by children who frequently walk about the camp eating these boiled grains from their hands.

252 It is clear from the description of vegetable dishes that the cooking pot plays an important role for
*415 food preparation, and all dishes prepared in this way, including cooked meat, are known to the Tuareg

as *téyint* (Ayr) or *talekkint* (Ahaggar). But pastoral Tuareg do not make eartenware pots themselves. 252
They obtain them from sedentary people, and it is possible that vegetable dishes have been prepared 415*
with hot stones up to recent times, for Foucauld states that hot stones are occasionally used for various [323]
vegetable dishes in Ahaggar (Foucauld 1951–52, IV, p. 1583). However, I have not been able to
confirm this during my own investigations among the Tuareg. It should be added that certain vegetable 252
dishes are neither boiled nor baked. This is the case with seeds and roots of various wild plants which are ground and pounded into flour to be eaten without further preparation. Such dishes are known to the Tuareg as *tébik* (Ahaggar) or *téderka* (Ayr). Seeds and roots of wild plants utilized in this way have been mentioned in the chapter on collecting p. 175 ff.

The Tuareg have a great many different dishes, but in spite of this variety they do not always change 262
their food from one day to another. They frequently live on the same type of food for extremely long periods. They may live almost exclusively on milk for weeks and even months, and if milk is not available they live so to speak exclusively on vegetable dishes, which may also not be changed for very long periods.

The Ahaggar Tuareg have three meals a day:— (1) *taġimġimt* which is a light meal taken in the 264
morning. (2) *amekli* which is a prepared meal (e.g., bread, porridge, or *aṛehara*) eaten at midday. (3) *amaġin* which is the evening meal, also known as *amensi*, or *aẓuẓeġ*. It is the most important meal.

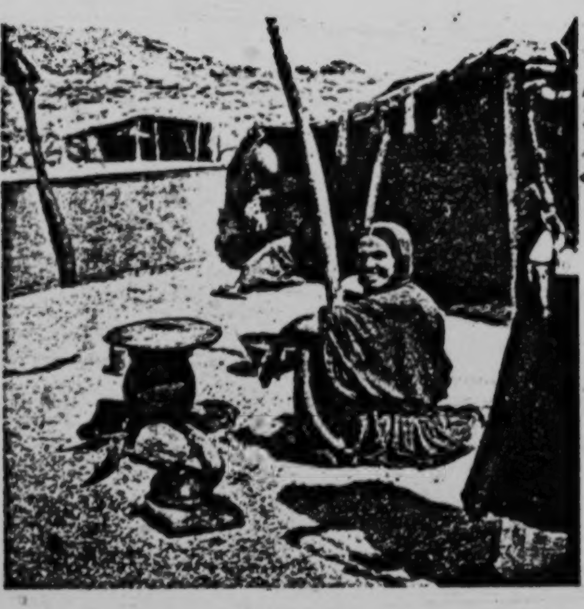

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Fig. 193. Tuareg woman cooking kuskus (*keskesu*) in an European enamelled pot. Ahaggar, the *Dag Ġali* tribe.

634 565 571 613 721 vassals was given to the drum-chief (the *Amenukal*) and not to the *temaẓlayt* master. However, should a vassal Tuareg have borrowed for raiding a riding camel from his *temaẓlayt* master or another noble Tuareg, they received a tribute also known as *abellag*, comprising half of the booty remaining when one half had been given to the *Amenukal*.

565 571 The noble Tuareg possessed many advantages over their individual vassals. They could apparently claim almost what they wanted for their subsistence, and frequently camped close to their vassals who then were obliged to feed them, and when in need of riding camels the noble Tuareg could freely take such animals from their vassals (Duveyrier 1864, p. 334 ff.). Similar information is given by Benhazera, but he states that the vassals in the past would not necessarily supply everything demanded by their noble lords (Benhazera 1908, p. 54). The vassals were under a particular obligation to provide the noble Tuareg with goat-breeding products, and if they had milk yielding she-camels the noble Tuareg could claim these animals until milk-yielding stopped. But the vassals had also many advantages from the *temaẓlayt* relationships. They were not only protected by their lords. The noble Tuareg would leave behind the animals they could not take with them when roaming in the desert, and noble Tuareg never had much livestock with them in their camps. It was also of great importance to the vassals that they could use their masters camels for caravan trading. On the whole the system was not exclusively the exploitation of vassals by the noble Tuareg, and it can be added that the vassal Tuareg were always more numerous than the noble Tuareg, that the drum-chief (the *Amenukal*) was elected by the vassals, and that he alone had judicial rights. The system was one of give and take to both classes involved, and there can be little doubt that it was well adapted to practical ecological conditions.

233 433 [234] [262] In Ahaggar, camels and goats are very complementary to each other. The camel supplies the Tuareg with milk, but with very few other products, and the Tuareg cannot always get milk from their she-camels which yield very little when pastures are dry. When grazing is good, camel's milk is important as food, but it is not well-fitted for churning butter, and cannot be used for cheese. Camels are occasionally killed, but as their meat is not very suitable for drying, the Ahaggar Tuareg kill camels to [281] utilize their meat only when many people congregate, as for instance at a marriage. Camel's hide is not very important in Tuareg craft, for tanning is not practised, and Tuareg camels have little hair which is used only for the manufacture of a few insignificant objects. To most Ahaggar Tuareg the [432] camels have little direct economic value. But for raiding in the past, camels were very valuable riding animals, and were then, as now, extremely important for caravan trading which provides the Tuareg with most of their vegetable food.

[234] [262] The economic rôle of goat-breeding is very different. Goat-products play a very comprehensive part in Tuareg nourishment. Goat's milk is not only drunk, but is also made into butter and cheese which can easily be stored. Goat's meat is superior to camel's meat, and one goat does not contain more meat than can be eaten quickly by the members of a normal household. Furthermore, goats are very important in Tuareg craft; tents, waterbags, and containers for different sorts of liquid and solid food are made predominantly from their skin, which was formerly also employed for whole garments. Goat's hair is extremely useful as material for ropes with which domestic animals are tethered, camel-loads are fastened, and the like.

Pastoral Tuareg could not survive in Ahaggar without goats. They might be able to subsist without 233
camels, which can be replaced by donkeys as beasts of burden. But camels make life much easier to 433
the Ahaggar Tuareg, who nowadays, as in the past, base their economy mainly on camels and goats.
I think it is fairly correct to say that most Ahaggar Tuareg get their milk-food from goats and their 262
vegetable food from caravan trading with the aid of camels.

Formerly, the true vassal Tuareg of Ahaggar were not allowed to possess camels, which were owned 565
exclusively by noble Tuareg. Foucauld says that 100–150 years ago the vassals had no camels, but 233
he does not mention his source of information (Foucauld 1951–52, II, p. 534). It is, however, confirmed 422
by many Tuareg that the vassals originally had no camels, and that throughout the 19th century they 571
had not many camels, while they were rich in goats of which the noble Tuareg had very few. Goat
products were given to noble Tuareg by vassals, and even to-day goats and butter form part of the
tiwsé-payments. The noble Tuareg, on the other hand, allowed their particular vassals to trade with
their camels against the payment of a certain amount of vegetable food products which to-day also
form part of most *tiwsé*-payments. They allowed their vassals also to have usufructs of such animals
as could not be taken with them on their migrations. Noble Tuareg of to-day continue to claim food
products and the like from their vassals. Poor noble Tuareg frequently ask gifts of the vassals, and
there are even noble Tuareg who temporarily camp close to rich vassals from whom they obtain part
of their food. Vassals may also lend their she-camels to noble Tuareg, who will return the animals
when milk-yielding stops; this is considered an old privilege of the nobility. The noble Tuareg of
to-day may ask vassals to render them minor services as, for instance, to guard domestic animals or
to look for animals lost in the desert, and one noble Tuareg told me that he had camels guarded by
vassals. But nowadays the noble Tuareg have no rights over their vassals, who can refuse any gift or 178
service demanded by noble Tuareg, and there are even noble Tuareg who wear amulets which are 289
believed to induce vassals to donate the things required.

It would seem that the economic relationships forming the basis of the Tuareg political system in 174
the north would arise so to speak automatically from two distinct cultures which met each other in 565
the desert: a camel-breeding culture of a Berber-speaking people now known as the noble Tuareg,
and a goat-breeding culture of an ancient Berber-speaking population which now constitutes the
vassals.

Some Tuareg traditions seem to indicate that political systems based on class-division arose in this 173
way in the north, but we have to admit that other traditions contradict this. Below I attempt to 565
elucidate Tuareg history in Ahaggar by means of native traditions to which, for practical reasons,
I allot definite numbers.

Tradition A. All Tuareg have a common origin as they descend from a woman named *Lemtuna*, who is also the ancestress of certain Berbers living around Ṛadamas in Tripolitania. Most Berbers of Morocco descend from *Lemtuna*'s sister who became the ancestress of the *Beraber*. This tradition is widely known in Ahaggar.

Tradition B.1. This tradition is a very common explanation of the origin of the class-division in Ahaggar: Long ago two Islamic women of the *Beraber* immigrated to the oasis of Silet from Tafilelt in Morocco. One of these women named *Ti-n-Hinan* was noble while the other woman named *Takama*

634 judicial or military authority, and the vassals could complain over their noble lords to the drum-chief,
565 whom they could even dismiss if dissatisfied with him.

[422] In some Tuareg groups the vassals were not allowed to possess camels, and it is interesting here to
mention that among certain East African peoples cattle or productive cows are owned only by people
[171] of a noble or aristocratic class (cf. Roscoe 1923a, p. 51; 1923b, p. 2, 15; Oberg 1940, p. 130; Maquet
1954, p. 29, 171). Where Tuareg vassals owned camels the noble Tuareg had the right to make use
of these animals, and even to-day there are vassal Tuareg of Ahaggar who give their milk-yielding
she-camels to the nobility.

642 In some Tuareg groups there seem to be traditions in favour of the theory that the class-division,
565 which forms the basis of most Tuareg political systems, arose as the result of the conquest by pastoral
[173] camel-breeders of nomads or semi-nomads subsisting mainly on goat-breeding. We have mentioned
that the word *Kel Ulli*, which means literally "the goat people", are used as a generic term for vassals
among the Northern Tuareg and also among the *Kel Dennek* of the *Iwllemmeden* Tuareg. We have
also seen that the word *Imɣad* is used for "vassals" in all groups, and it perhaps also refers to goat-breeding
with the meaning of "a kid" (cf. p. 408). If this latter explanation be correct it might seem
that the word "*Imɣad*" was originally a contemptuous term, and this is in accordance with the fact
that vassals among the *Kel Ahaggar* do not use this term, and do not like to be known by it, though
they have nothing against the term "*Kel Ulli*".

565 Even to-day there is a certain cultural distinction between noble Tuareg and vassals of Ahaggar.
[262] Rich noble Tuareg will whenever possible subsist on camel's milk, while vassals, although they may
be rich in camels, attach much importance to the breeding of goats and the manufacture of butter
[492] and cheese. The noble Tuareg use camels for the transportation of tents during nomadic migrations,
while even rich vassals will generally use donkeys. Noble women possess special riding saddles for
camels, but they are unknown in the class of true vassals. Vassal women do not generally ride camels,
but donkeys, which are never ridden by noble women. Noble Tuareg and vassals of Ahaggar are
culturally different in other respects, and I attach a particular importance to the following distinc-
[583] tions:— (1) In noble tribes bride-wealth is seven camels, in vassal tribes it is one to three camels,
alternatively perhaps goats. Among vassals of Tasilé-n-Ajjer bride-wealth is 25–30 goats. (2) The
[233] noble Tuareg brand camels and donkeys with a red-hot iron, whereas true vassals use earmarks for
donkeys, as they do for goats. However, in one vassal tribe, the *Dag Ɽali*, donkeys are marked in
[422] both ways. (3) Among noble Tuareg the tent belongs to the husband, among vassals it is owned by
the wife. (4) The noble Tuareg frequently use a tent with a central T-shaped post which is said to be
[342] peculiar to the tents used by noble Tuareg. (5) The bandoleer known as *tirẓemin*, or *ibeyderen*, perhaps
[293] connected with camel-riding, is said to have been used originally among noble Tuareg and not among
[262] vassals. (6) The noble Tuareg do not eat birds, eggs, fish, and reptiles, while vassal Tuareg will not
refuse food of this kind. It can be added that elements of an ancient hunting culture are found partic-
[224] ularly among vassals, who use the hunting spear with a wooden shaft, the spiked wheel-trap, and
[174] other ancient hunting methods. There are other distinctions between noble Tuareg and vassals, but
[233] the two originally distinct cultures have largely merged. Certain noble Tuareg to-day have large flocks
[462] of goats which, however, are tended exclusively by slave women. Apart from sewing, embroidering,

583 drum-chief *Agg-Elkhir*'s son, *Kheiji*, gave twenty camels for his wife. In certain tribes living around Agadez bride-wealth is nowadays also paid in cash. At a man's first marriage bride-wealth is paid by his father and is given to the bride's father who can dispose of the camels at his discretion. In the *Kel Ferwan* group all bride-wealth must be handed over to the bride's father before marriage takes place.

(2) *tisrar*, that is a gift to the bride and a gift of food to her parents who arrange the wedding-feast. These gifts are given by the husband or his parents and comprise the following:—

[291] 15 metres of cotton for two outer skirts (sing. *téri*) (cf. p. 294).
3 metres of cotton for one under-skirt (*tesegbes*) (cf. p. 294).
3 metres of cotton for a woman's shirt (*aftek*) (cf. p. 293, Fig. 239a).
3 *ilechchan* (sing. *alẹchchu*), indigo-dyed pieces of cotton which serve as the headcloth (*adalil*) of a married woman (cf. p. 14, 293).
1–2 pairs of *iṛatimen* (sing. *éṛatem*), sandals of the *takalmi*-type (cf. p. 298, Fig. 242b).

● [212] The amount of food to be given for the entertainment of wedding guests varies, but in general is estimated at 100–200 kgs millet (*énélé*), 10–15 litres of butter (*wiji*), and 5 litres of Sudanese honey (*tariwat*), plus an ox.

The gifts of cotton and food should be brought to the bride's father before marriage with the bride-wealth. The bride should not see the bride-wealth animals, nor should she see the gift of cotton until it has been made into her wedding clothes.

585 (3) The groom and his family have no obligations towards the bride and her family other than those mentioned above, but the groom is expected to give certain gifts to his wife after marriage:—

One gift is known as *timigint*. Before the bride is led into the wedding tent where the groom awaits her (cf. p. 474), the women who lead the veiled bride will claim a promise of *timigint* for the bride. On behalf of the groom one of his friends will promise to give the bride a gift – perhaps a camel – though there is no rule for the size of this gift. When the promise is given the women lead the bride into the tent. It is said that the groom is never forced later to give the *timigint* gift promised.

Some time after marriage the groom is expected to give his wife certain silver ornaments, notably the following:—

[301] *t'izabatin*, a pair of large ear-rings.
ténélét, a ring-formed pendant.
zakkat, the so-called Cross of Agadez, and the so-called Cross of Iferwan.
tadnet (perhaps not correctly spelled), a necklace.
térewt (pl. *téra*) *ta n tejekkot*, a silver ornament attached to the hair braid at the back of the head.

585 the broad side turning westwards. Inside the tent there is nothing beyond the large bed (*tédabut*) covered with mats and blankets.

(2) The wedding guests perform the ceremonial camel-ride (*ilugan*) in the afternoon and continue to sing, make music, and dance throughout the night.

[262] (3) The wedding feast continues the next day with the killing of an ox for the guests. On this day, early in the night (about nine o'clock), the groom comes to the wedding tent. He is closely veiled and walks in the middle of a large procession of men and some women. The procession walks slowly, the [533] women accompanying it shrilling and cheering. If the camp is situated close to Agadez the procession is led by professional musicians who on this occasion are on horseback. When the procession has arrived at the wedding tent the groom enters into it directly and without much formality, but does [514] so through the narrow end turning southwards. Some of his friends squat around him in the tent while a few blacksmiths drum and praise the groom in songs which also refer to the fact that the blacksmiths have arrived in order to transform the wedding into a great feast. When the groom has entered the tent most guests continue to dance and make music until about eleven o'clock, when the bride arrives.

(4) The bride is led towards the wedding tent by a procession of singing women who are not accompanied by musicians mounted on horses even if the camp is close to Agadez. The procession proceeds extremely slowly, and sometimes almost marks time. The women sing the praise of the veiled bride who walks in the middle of the procession behind a tall woman. The bride's hands are around the tall woman's waist, and she is hidden under a large piece of white cotton placed over the tall woman's shoulders and back. When the procession is close to the tent it is joined by many men and by the drumming blacksmiths who lead the procession to the wedding tent. Here the procession walks three times around the tent, stopping in front of the narrow entrance facing southwards. The women now claim the promise of a gift from the groom to his bride (cf. p. 462). When a gift has been promised the tall woman creeps into the tent with the bride clinging to her back. The bride is placed upon the bed together with the groom who is already sitting there, the mat at the southern end is drawn to and closed, and the bride and the groom are left alone. The wedding is now over, and the guests leave for their tents and camps.

(5) The bride and the groom now remain seven days in the tent. They leave it only to releave nature [591] and preferably after darkness. When this stay of seven days in the wedding tent is over, the newly-married couple immediately take up residence in the camp of the husband's father.

From the description of Tuareg wedding ceremonies above we see that they develop very slowly. This is particular so in Ahaggar, where the bride and the groom are brought together to be separated again before being finally united in the correctly erected tent. In Ayr the bride and the groom are brought together more directly, but do not meet until the second day of the wedding feast. They then have to enter the tent in an abnormal way – through the narrow southern end. The fact that the ceremony develops slowly and that the tent is not correctly erected are traits typical both of the Ahaggar and the Ayr Tuareg.

585 121 It is clear that the groom and the bride during the ceremony live so to speak outside the community. Tuareg wedding ceremonies are characteristic rites of passage and contain traits common to many

Hahn, who was the first to write in detail on the historical origin of subsistence activities, stated 121
as his view that cultures based exclusively on stock-breeding were recent and were preceded by mixed farming cultures (Hahn 1896, p. 31 f.; 1905, p. 131; 1908, p. 19). Though some of Hahn's arguments in favour of this theoretical conception are difficult to accept, his general view that pure stock-breeding did not form a general stage in the evolution of culture is recognized by many scholars who hold that cultivation is everywhere older than stock-breeding. Forde long ago pointed out the great instability of pastoralism and its dependence upon grown cereals (Forde 1950 (1. ed. 1934), p. 403 f.), and in a very recent study, published in collaboration with Mary Douglas, it is stated that "Pastoral nomadism which is popularly believed to have preceded the development of agriculture actually appeared at a later stage in the Old World on the fringes of settled populations used to cultivation with the rearing of livestock" (Forde 1960, p. 330). Important contributions to the solution of the problem of the origin of stock-breeding have also been made by Childe, who says that in practically all the oldest food-producing settlements examined by archaeologists in Europe, Hither Asia, and North Africa, the basic industry is mixed farming (Childe 1936, p. 85). Childe does not explicitly claim that pastoral stock-breeding derived from a mixed farming culture, because pastoralists are not likely to leave many vestiges by which the archaeologists can recognize their presence (Childe 1936, p. 91). But Childe's general view seems to be in favour of origin of pastoral stock-breeding from a culture which knew farming, and he points out "that ancestors of our farmyard animals lived wild in most of the regions that seem likely to have comprised the cradle of grain-growing" (Childe 1936, p. 86).

In my description of Tuareg ecology I have indicated the great importance of agricultural products 433
for food among true pastoralists, both in Ahaggar and in Ayr. I believe that the latter Tuareg and the 212
Tuareg of the Sudanese savannah could perhaps subsists without cereals grown by agriculturists, 171
though it would not be so easy for them. The Ayr Tuareg around Agadez admit this and refer to their great difficulties in subsisting during one year of the second world war when millet was scarce. Most African pastoralists acquire provisions of cultivated grain for their food during periods when milk is scarce, and the general conception that African nomads live mainly on milk and meat is not valid. However, we cannot state that all pastoralists are dependent on agriculture for food, for a few people seem to subsist on stock-breeding products and on wild seeds. Thus Seligman describes from the Beja a tribe named Bedawib which differs from other Beja groups in that its members have no camels and do not eat agricultural food:— "The Bedawib do not cultivate at all and it is said that they would not touch grain even if it were given to them so that they live almost entirely on milk and meat". (Seligman 1913, p. 599 f.). Other pastoralists of the so-called East African Cattle Complex eat cereals grown by themselves or by neighbouring agriculturists, but agricultural food-products play a very little part to some of these people (cf. Lowie 1938, p. 314), and the Hottentots live by cattle-breeding supplemented by hunting and collecting (cf. Schapera 1930, p. 235). The argument that stock-breeding cultures cannot exists except in a kind of symbiosis with agriculture is not valid, but agricultural food-products make life easier for pastoralists who cannot subsist on milk all the year round. For we must bear in mind that in an arid or semi-arid country conditions of collecting are changeable, and it is also important to note that wild seeds are generally far less nourishing than are grown cereals. Even in the savannah country it is a great advantage for pastoralists to have access to grown cereals, and

433 pastoralists who live in the true desert country could hardly live without agricultural food-products.
262 In dry years the Ahaggar Tuareg subsist almost exclusively on wheat, millet, and dates. They cannot
171 in such years live on milk and meat, and collecting is of no importance, as the plants suitable for collecting do not germinate with the exception of a few species which are of very little value. In very arid countries agriculture seems to be necessary for the subsistence of pastoralists, and it is of great value also to pastoralists who live under more favourable conditions.

433 Partly owing to the decline of caravan trading, there are pastoralists who have recently taken up
178 agriculture in connection with irrigation. We have also mentioned that the Tuareg of Tasilé-n-Ajjer
171 engage in a kind of primitive agriculture in the river valleys after heavy rain, and we know from literature that this method was also practised in Ahaggar before the introduction of developed irrigation systems. We have seen that throughout the northern parts of the Sahara a connection between shifting cultivation and pastoralism is the rule rather than the exception. Primitive corn growing is, in fact, practised among many other pastoralists besides the Northern Tuareg, and the bedouins who sow wheat and barley by means of the plough or the hoe further north on the outskirts of the desert. In Southern Mauretania certain nomads grow millet and water melons in the river valleys which are annually flooded. Sowing is done mainly where the valleys broaden, small dams being constructed to detain water. This cultivation method is also applied by certain pastoral *Zenaga* (cf. Capot-Rey 1953a, p. 277), who are, perhaps, descendants of the ancient *Sanhaja* Tuareg who lived in this country before the Arab conquest. There are also pastoralists of the Beja people who engage in agriculture when living close to rivers. The Bisharin who camp around the Atbara River grow melons in the wet sand (Baker 1867, p. 38), the Hadendoa pastoralists, when camping close to the Gash River in the dry season, grow millet and other cereals (Seligman 1913, p. 599), and agriculture is also practised in the same region by pastoral Beni Amer (Munzinger 1864, p. 332).

A journey from the Mediterranean coast takes us from people who live mainly by agriculture (e.g., the Kabyle) to people who live by mixed farming as semi-nomads (e.g., the Chawiya), to people who are roaming pastoralists but practise shifting cultivation when possible and fairly regularly (e.g., the Ulad Nail, the Larba, and other Arab pastoralists on the outskirts of the desert), and, finally to the true desert nomads where agriculture is practised on a very small scale (e.g., the *Kel Ajjer*) or not at all (e.g., the *Kel Ahaggar* and the Chamba). It would thus be natural to explain the development of true pastoralism in Northern Africa as an adaption of a mixed farming culture to environment, and this view seems to have been adopted by several authors (Frobenius 1904, p. 154 f.; Steensby 1908–09, p. 285; Wölfel 1941, p. 89–140; Herzog 1956, p. 210–223).

174 The question of the origin of North African pastoralism can only be answered by a deeper knowledge of history, and the answer is not easy to find. Historical sources do not reach far back in North Africa. We know that throughout the Middle Ages the people who lived on the borderland of the Northern Sahara south of the Atlas and along the Mediterranean coast possessed an economic system much like that prevailing nowadays. Ibn Khaldun describes the economic life of the *Sanhaja* Berbers, who lived in the country between Tunis and Cairuan, saying that they are cow and sheep breeders who also engage in agriculture (Ibn Khaldun III, p. 225). Of an Arab tribe called Azza of Cyrenaica, he says that though its members are plough cultivators they also lead their domestic animals into the